Indian Archaeology

1968-69

A REVIEW

INDIAN ARCHAEOLOGY 1968-69
—A REVIEW

EDITED BY
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Director General
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Cover :

The Archaeological Survey of India has undertaken a programme of beautification of monuments. As a part of it, Jantar Mantar, New Delhi, was flood-lit on 17th February, 1969. The photograph shows the Samrat Yantra on the right and the Misra Yantra in left background.

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PREFACE

In the preface to the *Review* for 1967-68, I had expressed the hope that by the end of 1970 it may be possible to clear the backlog. The *Review* for 1968-69 is now ready for the press, while that for 1964-65 is expected to be out in a couple of months. Thus, if there is no printing bottle-neck, it may well be possible to realize the hope.

The material for the present issue has been received, as usual, from State Departments of Archaeology, universities and research institutes—both Indian and foreign, and the Survey itself. To all concerned my grateful thanks are due.

I am also beholden to Shrimati D. Mitra, Dr. G. S. Gai, and Sarvashri B. K. Thapar, K. Deva, R. Sengupta, M. C. Joshi, K. S. Ramachandran, W. H. Siddiqi, J. S. Nigam, N. C. Ghosh, B. M. Pande and S. R. Varma for helping me variously in bringing out this issue.

New Delhi,
August 20, 1969.

B. B. LAL

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INDIAN ARCHAEOLOGY 1968-69

—A REVIEW

I. EXPLORATIONS AND EXCAVATIONS

ANDHRA PRADESH

1. EXPLORATION IN DISTRICTS CHITTOOR AND NELLORE.—Dr. K. D. Banerjee of the Prehistory Branch of the Archaeological Survey of India,[1] assisted by Sarvashri H. N. Singh, S. N. Jaiswal, J. N. Gandhi, S. V. Sutaone and P. M. Bhope, explored Early and Middle Stone Age sites at Chiratanur in Taluk Chandragiri and Chillakuru, Isakatageli and Kalahasti in Taluk Kalahasti of District Chittoor and Chittedu and Gudali Hill in Taluk Gudur, Biradavada, Bopataih Konda and Rosanuru in Taluk Sulurpet and Menskura in Taluk Venkatagiri of District Nellore.

A cutting at Biradavada revealed a deposit of completely decomposed granite and schist. The surface of this deposit showed erosional disconformity, marked by the presence of quartz bands, often accumulated under lateral pressure. Following the disconformity was a detrital laterite containing Acheulian tools similar to those found at Vadamadurai.

A cutting at Chillakuru showed a deposit of implementiferous detrital laterite resting over a primary laterite. Bopataih Konda and Gudali Hill showed a deposit of small pebbles with flat surface.

2. EXCAVATION AT BATTALAVALLAM, DISTRICT CHITTOOR.—Dr. K. D. Banerjee of the Prehistory Branch of the Survey, assisted by Sarvashri H. N. Singh, S. N. Jaiswal, J. N. Gandhi, S. V. Sutaone and P. M. Bhope, excavated a Stone Age site at Battalavallam in Taluk Satyavedu. The excavation revealed a peneplain of completely laterized Sriperumbudur shale which was found to have been impregnated with ferruginous solution, resulting in an extremely hard vesicular form. The surface of the laterite showed disconformity, over which lay a deposit of detrital laterite. The latter deposit contained tools of an earlier industry, presumably washed down along with the laterite, as also of an industry belonging to the transitional phase between the Middle and Late Stone Age horizons. The latter was identified by Shri B. B. Lal, Director General of the Survey, who helped in the isolation of this industry.

3. EXCAVATION AT PEDDABANKUR, DISTRICT KARIMNAGAR.—The Department of Archaeology and Museums of the Government of Andhra Pradesh, under Shri Mohd.

[1] The Archaeological Survey of India is referred to in the following pages as the 'Survey'.

Abdul Waheed Khan, undertook excavation at Peddabankur in Taluk Peddepally, about 29 km. from Karimnagar. The main objectives of the excavation were: (i) to extend to this region the results of the already excavated sites in Andhra Pradesh, like Amaravati, Nagarjunakonda, Kondapur, etc.; and (ii) to ascertain the nature of the megalithic occupation. The excavation revealed two cultural periods, labelled I and II.

From bottom upwards, Period I was represented by the occupation of the megalithic people. Of the structural remains of this Period, mention may be made of a massive baked brick structure, covering an area of 39·5 × 30·3 m. and standing to a height of four courses and showing an entrance in the northern wall. Inside the structure were found three wells (pl. IA) constructed with wedge-shaped bricks. Besides the distinctive Black-and-red Ware, several iron objects, including a dagger, sickles and arrow-heads, saddle querns and copper bangles and antimony rods, were obtained from the deposits of this Period.

Period II was further divided into two Sub-periods. Sub-period II A was distinguished by the occurrence of a red ware and a coarse variety of black-and-red ware and a punch-marked coin. Of the structural remains, only a terracotta ring-well, 57 cm. in diameter and having seven rings, was exposed. Among the other finds, mention may be made of a terracotta seal showing Gaja-Lakshmi, beads, variously of terracotta, glass and semi-precious stones, iron and copper objects and terracotta figurines. Sub-period II B was marked by the occurrence of numerous Satavahana coins and a Roman silver coin of Augustus Caesar. A noteworthy find, however, was that of a terracotta seal (pl. IB), inscribed in early Brahmi characters and reading *Vijayapura-harakasa rathasa.* Other finds, including pottery, belonging to this Sub-period continued to be of the same type as those of the preceding Sub-period. Of the structural remains, a 16·8-m. square brick *mandapa,* standing to a height of ten courses, was exposed. Along the exterior of the walls of this structure were noticed irregular post-holes, while at the centre of the enclosed area was a 1·11-m. square cistern.

4. EXPLORATION IN DISTRICT MAHBUBNAGAR.—In the course of his exploration, Shri K. Paddayya of the Deccan College Postgraduate and Research Institute, Pune, discovered Middle Stone Age sites at Gurjihal and Hindupur in the Makhtal Taluk. These fall into two groups: (i) open-air workshop sites, located on high-level gravels, similar to those exposed in the Shahpur and Shorapur Taluks of District Gulbarga, Mysore; and (ii) stratified sites showing a sequence (from bottom upwards) of weathered bed-rock, tool-bearing conglomerate (½ to 1 m. thick), yellow-brown silt (2½ m. thick) and black-brown silt (½ to 1½ m. thick).

At all the explored sites, the tool-bearing conglomerate showed varying quantities of chert (ranging between 5 and 30 per cent), redeposited from the high-level gravels. This evidence reinforces the view that the high-level gravels of the Krishna and Bhima rivers were formed prior to the Middle Stone Age times.

ASSAM

5. EXPLORATION IN DISTRICT GARO HILLS.—In the course of explorations undertaken by the Department of Anthropology, University of Gauhati, a Stone Age site was located at Thebronggiri, 21 km. to the north of Tura, the headquarters of the District. Professor K. de B. Codrington, formerly of the School of Oriental and African Studies, University of London, along with members of the teaching staff of the Department of

Anthropology and History, revisited the site in March, 1969. A large number of tools consisting of crudely flaked axes (pl. IIA), knife-blades, microliths, arrow-heads, points, cores and hammers (pl. IIB) was collected from the site.

6. EXCAVATION AT AMBARI, GAUHATI, DISTRICT KAMRUP.—The Department of Anthropology, University of Gauhati, in collaboration with the State Department of Archaeology, carried out salvage digging at Ambari, where the Reserve Bank of India had excavated an area of 45 × 20 m. to an average depth of over 1 m., for constructing a building. The site is located on the bank of an old channel of the Brahmaputra, the present course of the river being 1 km. to the south.

The exposed depth of the excavated trenches showed five layers (from top downwards): (i) dark grey earth (30 cm.) mixed with débris of modern industrial activity; (ii) light brown earth (25 cm.), containing sculptures, brick fragments, pottery, etc.; (iii) compact brown earth (50 cm.), containing bricks, large quantities of pottery, pebbles, hearths, etc.; (iv) a brownish grey earth mixed with rubble and pottery (30 cm.); and (v) dark-grey earth (partly exposed), containing brick-bats, pottery, etc. Subsoil water-level was reached at a depth of about 1·82 m. below the present surface: At no point was the natural soil exposed.

During salvage operations, over forty stone sculptures were obtained from the second layer. These include images of Vishnu, Surya, Nandi, Durga and Agni with Svaha and Svadha and *lingas* and *yonis* of various sizes. Stylistically, they may be assigned to ninth-tenth century A.D. Belonging perhaps to the same layer was a stone structure of which the foundations were made of dressed stone blocks of various sizes ranging in elevation from 60 × 50 cm. to 47 × 30 cm.

On the northern part of the trench, a brick structure, running in north-east to south-west direction, was exposed to a length of 24·35 m. and showing a maximum height of fifteen courses. The thickness of the structure, however, could not be ascertained. The bricks used were of the size of 21 × 21 × 4 cm. The structure is at one point pierced by a conduit (18 × 30 cm.), showing a brick-paved drain, with side walls of dressed stone-blocks and partly dressed stone cover-slab. Adjacent to the structure, to its north-west, was a burnt earth patch indicating its probable use as a fire-place. To its west, a noteworthy brick structure, 50 cm. in thickness, with an inner brick-on-edge facing, and having an apsidal outline, was partly exposed, the size of the bricks used being 26 × 26 × 6 cm. Some structures of flat bricks were also exposed in the south-eastern and south-western corners of the trench at depths of 1·21 m. and 1·52 m. respectively. Large quantities of tiles and drain-pipes were also obtained from the area.

As the excavation was essentially a salvage one, it is difficult to relate the pottery to the different layers. On the basis of surface colour, however, they can be grouped into five classes: (i) kaolin white; (ii) buff; (iii) red; (iv) grey and (v) dark grey to black. Almost all of these are made on wheel. Besides, a fragment of Chinese Celadon Ware and sherds of local glazed ware, showing green, silver, cream and red surface-colours were also found. The latter ware is assignable to twelfth-fourteenth century A.D.

An important pottery type, recovered essentially from the lower levels of the site, was a shallow dish with a flared rim. It has a remarkably smooth surface, with an almost metallic ring and bears on the interior base concentric incised circles, and on the rim wavy lines. Among the impressed designs, mention may be made of rosettes and diamonds (pls. IIIA and IIIB) on kaolin white, buff and dull-red wares. Among other finds, mention may be made of a cornucopia-shaped lamp-stand (pl. IIIC), beads

and bangles variously of terracotta and glass, terracotta figurines (pl. IV), a terracotta seal showing a human head (?), an iron arrow-head, a few rings of copper and iron and a small copper coin minted by the East India Company.

BIHAR

7. Excavation at Antichak, District Bhagalpur.—The Department of Ancient Indian History and Archaeology, University of Patna, under Prof. B. P. Sinha and Dr. R. C. P. Singh, resumed (*Indian Archaeology 1964-65—A Review*,[1] p. 5) the work at Antichak. The whole of the south-eastern quadrant of the *stupa* was completely cleared. Clearance work brought to light, as in other quadrants, the drum of the *stupa* and the lower and upper circumambulatory paths. The latter did not reveal any new feature except for a brick wall 14 meters in length, erected right on the floor of the lower *pradakshina-patha* in the south-western quadrant. The wall in question was made at a later stage, possibly with a view of providing support to the superstructure. Terracotta plaques, showing Buddhist deities and other scenes, which could be viewed from the lower circumambulatory paths, were found fixed on the walls of the upper circumambulatory paths in both the quadrants. The Buddhist deities were invariably shown seated on a double-lotus pedestal. Other scenes represented mainly animal figures, birds and daily life. On the floor of the circumambulatory paths were found a number of inscribed terracotta votive *stupas*.

The most significant discovery of this season's work, however, consisted of a 60 cm. high stone votive *stupa*, bearing an eight-line inscription on each of the three sides of the square base and a five-line inscription on the fourth. This was recovered from the débris overlying the floor of the lower *pradakshina-patha* in the south-eastern quadrant. An equally interesting discovery was that of a 60-cm. high stone stele with the image of crowned Buddha in *bhumisparsa-mudra*, seated on a double-lotus pedestal and bearing one-line inscription at the bottom.

8. Exploration in District Bhagalpur.—At the instance of Prof. B. P. Sinha, Head of the Department of Ancient Indian History and Archaeology, University of Patna, Sarvashri B. Narayan and S. K. Kaviraj, assisted by students of the Archaeology Group, explored the Champa mounds, located about 5 km. to the west of Bhagalpur town and about 1 km. to the north of the Nathnagar-Bhagalpur road. In the course of the exploration, the party observed traces of a mud fortification wall near the bungalow of the Principal, Police Training School, Nathnagar, where the mound has been cut for taking the pipe line to the residential area situated on the outer side of the mound. Exploration yielded sherds of plain as well as painted black-and-red ware from the lower deposits of the site and of the Northern Black Polished Ware (abbreviated in the following pages as N.B.P. Ware) from the upper levels. Besides, terracotta figurines of the Sunga period were also found.

The University team also explored the Jahangira area about 8 km. to the west of Sultanganj on the main Sultanganj-Bhagalpur road. The ancient mound here is being eroded by the river Ganga. Along the eroded bank, which is quite high at this place, one can notice ring-wells and remains of brick walls. The pottery recovered from the

[1] This publication is referred to in the following pages by the year only.

eroded bank included crude and fine varieties of black-and-red ware along with its associated types and the N.B.P. Ware. Among the noteworthy shapes collected from the site were the dish-on-stand in black-and-red ware and lipped bowl in red ware.

9. EXPLORATION IN DISTRICT RANCHI.—Shri B. K. Sharan of the Mid-eastern Circle of the Survey carried out explorations around Nurudih, situated in the hilly and forested tract of Khunti Sub-division, and discovered tools which are transitional between the Middle and Late Stone Age industries. The tools were of fine-grained chert excepting a few which were in quartzite. Majority of these, however, were made on small flakes. The types included scrapers, points, burins and backed blades.

On a hilly plateau near village Tamar in the same Sub-division, Shri Sharan discovered another set of interesting tools, showing an evolved typology with numerous blades, lunates, and finely-worked points.

10. EXCAVATION AT CHIRAND, DISTRICT SARAN.—The Department of Archaeology and Museums, Government of Bihar, resumed (*1963-64*, pp. 6-8) the excavation at Chirand under the general supervision of Dr. B. P. Sinha; the work was conducted by Dr. B. S. Verma, assisted by Shri N. Akhtar of the University of Patna. It may be stated that one of the C-14 samples collected in 1964-65 from the earliest levels of this site has already been dated to 3600 ± 100 B. P. (TF. 445). To confirm this date, therefore, it was thought desirable to collect fresh samples from the site. Two trenches, each measuring 10-m. square, were taken up at two different places of the site.

As a result of this season's work, the sequence of cultures, previously revealed at the site, has been modified to include one more cultural period, necessitated by the discovery of five debased gold coins of Srimad-Gangeyadeva of the Kalachuri dynasty (A.D. 1045) and a few fragmentary images of the Pala period.

As already reported, Period I is divided into two Sub-periods. Sub-period IA was again confirmed by three occupational levels, on the earliest of which were discovered a circular hearth and post-holes. In the restricted area of the trench, however, the exact plan of the houses could not be ascertained. This year's excavation yielded new shapes (pl. VA) such as bowls with elongated lip in black-and-red as well as in plain red wares, and *lotas,* having straight high necks and corrugated shoulders, in black-slipped and black-and-red wares. Among the other finds recovered from this Sub-period, mention may be made of a fairly good number of microliths, including cores and flakes, bone arrow-heads and pins (pl. VB), small pieces of copper (badly corroded), terracotta beads with incised designs, stone balls and beads, etc. Besides, thick chunks of burnt clay, retaining impressions of reeds on one side (pl. VIA), were also found on the various floors. On the top level of this Sub-period, a suspected post-cremation burial was partially exposed. A neolithic axe, two tiny steatite disc-beads, one copper bead, a fairly good number of microliths and bone arrow-heads and pins were discovered while scraping the upper surface of the burial.

As indicated in the earlier report, Sub-period IB was characterized by the appearance of iron (a solitary piece in the shape of a fragmentary, heavily rusted blade). This season's excavation revealed animal burials (pl. VIB) which yielded, besides pottery and bone pieces, a few microliths, a bone arrow-head and several bone pins. No iron was found in association with the burial. In so far as the ceramic industry is concerned, there was no marked change from the position obtaining in Sub-period IA. Other finds included pear-shaped and incised terracotta beads. A large number of bones of animals, birds and fish were also found from the deposits of the Sub-period.

Period II was marked by the appearance of the N.B.P. Ware. Black-and-red ware, however, continued to a restricted extent throughout the Period. Among other important antiquities belonging to this Period, mention may be made of a neolithic axe, copper antimony rods, beads of semi-precious stones, stone balls, pestles and querns, terracotta toy-cart and animal figurines, bone arrow-heads and pins, stone ear-studs and iron blades. Remains of baked brick walls were exposed in the upper levels of this Period. A noteworthy discovery of this Period was an animal burial in a specially dug circular pit (pl. VIB). Besides pottery, charcoal pieces, bone arrow-heads and a bone pin were obtained from this burial.

Period III was marked by the finds of the early centuries of the Christian era, including a hoard of eighty-eight Kushan copper coins, terracotta human and animal figurines, and a decorated disc (pl. VII). Baked brick structures of two phases were also exposed.

Period IV, which has been marked for the first time at Chirand, yielded five debased gold coins of Srimad-Gangeyadeva of the Kalachuri dynasty (pl. VIIIA). These, along with two gold wire-rings, four silver finger-rings, one silver piece and three heavy bronze bangles lay in a miniature pot. Two fragments of Pala images (pl. VIIIB), one of which represents Trimurti (for the first time noticed in northern India) and a set of chess gaming-pieces of sun-dried clay were also discovered from this Period.

11. EXPLORATION IN DISTRICT SINGHBHUM.—While exploring neolithic settlements in the District, the Department of Anthropology, University of Calcutta, found a large number of chipped and ground celts and numerous handmade potsherds at Barudih.

GUJARAT

12. EXPLORATION IN DISTRICTS AHMADABAD, BANASKANTHA, BROACH, BULSAR, PANCHMAHALS AND SURAT.—The Department of Archaeology, Government of Gujarat, during the course of exploration in the above-mentioned Districts, located a Middle Stone Age site, twenty-seven Late Stone Age sites and two historical sites. The location of each site is shown below in a tabulated form.

District	*Taluk*	*Nearest village*	*Site/river-valley*
		MIDDLE STONE AGE SITE	
Bulsar	Navsari	Kurel	Purna River
		LATE STONE AGE SITES	
Ahmadabad	Dascroi	Dhamatvan	Boria Mound
Broach	Zagadia	Zanzpore	Zarankhadi River

District	*Taluk*	*Nearest village*	*Site/river-valley*
Panchmahals	Dohad	Undar	Annas River
-do-	-do-	Annas	-do-
-do-	-do-	Jalat	Khan River
Surat	Bardoli	Vagech	Purna River
-do-	-do-	Madhi	Gunvanti or Gabhani River
-do-	-do-	Surali	-do-
-do-	Songadh	Onta	Borkhadi
-do-	Vyara	Vyara	Mindhola River
-do-	Mahuva	Mahuva	Purna River
-do-	-do-	Amachak	-do-
-do-	-do-	Amaroli	-do-
-do-	-do-	Kavitha	-do-
-do-	-do-	Shekhapur	-do-
-do-	-do-	Kuvadia	-do-
-do-	-do-	Kajli	-do-
-do-	-do-	Miyapur	-do-
-do-	-do-	Ranat	-do-
-do-	Valod	Buhari	-do-
-do-	-do-	Nani-Bahari	-do-
-do-	-do-	Andhatri	-do-
-do-	-do-	Golan	-do-
-do-	-do-	Goldha	-do-
-do-	-do-	Dadaria	-do-
-do-	-do-	Valod	Valmiki or Jhankhari River
-do-	-do-	Nothala	-do-
		HISTORICAL SITES	
Banaskantha	Radhanpur	Deva	Jalar-no-timbo
Panchmahals	Limkheda	Limkheda	Hathidhara

13. EXPLORATION IN DISTRICT BARODA.—The M. S. University of Baroda explored an early historical site at Ajabpura, Taluk Savli, and found Kshatrapa coins and sherds of Roman amphorae and Red Polished Ware. A survey around Kadia Dungar revealed the presence of old stone quarries and habitations.

14. EXPLORATION IN DISTRICT BROACH.—During the course of his exploration in the District, Shri K. P. Gupta of the Western Circle of the Survey discovered Middle and Late Stone Age tools (pl. IX) at Bilwada, Kesarava, Rajalwada and Vadakhunta.

Shri M. M. Ganam of the same office located a Middle Stone Age site at Selot and an early historical site at Selot and Vanakpur.

15. EXPLORATION IN DISTRICT BROACH.—A joint Cambridge-Baroda team, represented respectively by Dr. Mrs. Bridget Allchin (Cambridge University) and Dr. K. T. M. Hegde (M. S. University of Baroda), investigated the Pleistocene and Recent alluviums and their associated human tools in the lower Narmada valley and recorded features of the valley itself and the surrounding plain and coastline. These provide evidence of a sequence of events in Pleistocene and Recent times which will be of value in dating early human cultures in Gujarat. Many of these features are the result of tectonic sensitivity of the region. The most notable is the terrace system of this section of the river's course which does not appear to have been recorded earlier. A few Middle and Late Stone Age sites were also located.

Analytical studies of the samples collected in the field have indicated, among other things, that (i) there were at least five interruptions in the aggradation process of the river alluvium and (ii) the black cotton soil is not always very old and does not require a woody vegetation-cover for its formation.

16. EXPLORATION IN DISTRICT BULSAR.—Shri B. D. Chitale of the Western Circle of the Survey found Early, Middle and Late Stone Age tools at Upsal. He also explored an Early and Middle Stone Age site at Motiwalzar and two Middle and Late Stone Age sites each at Ranifalia and Sindhai. Among the Middle Stone Age tools, scrapers and points were found to be predominant.

17. EXCAVATION AT GHUMALI, DISTRICT JAMNAGAR.—A small-scale excavation was undertaken jointly by the State Department of Archaeology and the University of Saurashtra at Ghumali in Taluk Bhanvad. Excepting pottery and coins of late medieval period, no other antiquities of importance were obtained.

18. EXPLORATION IN DISTRICT SURAT.—Shri D. B. Chitale of the Western Circle of the Survey explored an Early Stone Age site at Pathakwadi on the Ambica river and collected a good number of choppers.

HARYANA

19. EXPLORATION IN DISTRICT AMBALA.—Shri D. K. Handa explored the following sites in Tahsil Jagadhari and found pottery of the medieval period at each one of them: (i) Darua, about 3 km. north-east of Yamunanagar; (ii) Gadhauli, about half a km. south-west of Darua; (iii) Kharwan, about 8 km. east of Jagadhari and (iv) Chhachhrauli, about 16 km. east-north-east of Jagadhari.

20. EXCAVATION AT DAULATPUR, DISTRICT KARNAL.—The Department of Ancient Indian History, Culture and Archaeology of the University of Kurukshetra undertook a small-scale excavation at Daulatpur, situated along the banks of the Chautang river (ancient Drishadvati), about 15 km. east of Thanesar. The objective of the work, which was directed jointly by Dr. U. V. Singh and Shri Suraj Bhan, was to ascertain the stratigraphical relationship between the Late Harappan and Painted Grey Ware Cultures, the existence of which at this site was already indicated by surface exploration.

Excavation revealed a succession of four cultural periods, the earliest of which belongs perhaps to a late phase of the Harappa Culture and the latest to the early medieval times. There is evidence to show that at the end of the Harappan phase there was a break in occupation, subsequent to which the site seems to have continuously been under occupation till finally deserted in medieval times.

Period I was marked by the occurrence of thick sturdy ware including the painted variety showing such Harappan forms as the dish-on-stand and jar. The evolved shapes, inferior treatment of the surface and the simpler and fewer decorations in this pottery indicate a decadent stage of the Culture. Among other finds were obtained grinding stones, bangles of terracotta, faience and copper or bronze, beads of semi-precious stones and charred grains. No chert blades have so far been found.

Period II represented the culture associated with the use of the Painted Grey Ware. A series of pits yielding this Ware were found in the excavated trench, within the restricted limits of which their exact significance could not be ascertained. Besides, an antimony rod of copper, bone pins and stone grinders were also obtained from the deposits of this Period.

Period III was divisible into two phases represented respectively by the grey and other wares commonly associated with the N.B.P. Ware and the sophisticated Red Polished Ware. Noteworthy finds from the Period comprised clay sealings including a seal bearing early Brahmi script, coins, terracotta figurines, bangles of copper, shell and glass, beads of glass, carnelian and terracotta and iron objects.

Period IV, of which there was only a thin occupation at the top levels of the mound, belonged to the medieval times and was distinguished by its characteristic glazed pottery.

21. Exploration in District Rohtak.—During the course of his exploration along the right bank of the Yamuna river, Shri K. N. Dikshit of the North-western Circle of the Survey re-examined the extensive site at Kheri Gujar in Tahsil Sonepat and found pottery and sculptures of the early medieval period.

JAMMU AND KASHMIR

22. Exploration in District Kathua.—In continuation of the previous year's work in the District, Sarvashri R. K. Pant and Puran Singh of the Frontier Circle of the Survey explored the area flanking the river Basantar just near Samba town, and collected Early Stone Age tools from terraces at Nandi, Mananu and Palth (pl. XA). The last-mentioned site yielded more than fifty pebble tools of various types including discoids, flakes and cores.

Besides, two sandstone mace-heads (pl. XB) were obtained from Palth, along with a gritty red ware. The pottery is handmade, medium to thick in fabric and shows medium-grained sandy inclusions.

Two stray mace-heads were also found at Diyalachak and Mananu.

Sarvashri Sardari Lal and S. N. Tikoo of the same office explored the area flanking the rail-link under construction between Kathua and Jammu. This investigation was taken up largely with a view to finding out the archaeological potentialities of the area likely to be covered by the new rail-link. No archaeological sites of any importance were, however, encountered. Nevertheless, an isolated flake tool was picked up from a terrace flanking the river Devak near Samba.

23. EXCAVATION AT BURZAHOM, DISTRICT SRINAGAR.—The excavation at Burzahom was resumed (*1964-65*, p. 13) under the direction of Shri T. N. Khazanchi, with assistance from Sarvashri S. Lal and R. K. Pant. This season's work was intended largely to elaborate the structural details, including roofing pattern, of the pit-chambers. The excavation exposed quite a few dwelling-pits (pl. XI) along with associated post-holes, side drains, storage-pits, hearths and mud platforms (pl. XIIA). Closer observation revealed that the post-holes in the corners were deeper and broader as compared to the remaining ones. It is reasonable, therefore, to infer that the former carried posts to support the roof. The dwelling-pits generally had a central post to support the roof. Except in one or two pits, hearths were found generally in the centre. Oval-shaped and lined with clay (in two cases lined with stone), the hearths contained mainly ash and burnt clay. The pit-chambers also showed partitions.

Among the antiquities found during this season's work, mention may be made of: (i) saw-edged bone object (pl. XIIB); (ii) scrapers of horn with broad butt and polished sharpened working edges; (iii) stone pounders with grinding marks and smoothed surfaces and (iv) stone querns.

KERALA

24. EXPLORATION IN DISTRICT PALGHAT.—Shri C. Chandrasekharan Menon of the Southern Circle of the Survey, discovered cists in a private compound in Edappa village and in Mannarghat, and a disturbed rock-cut cave at Vellimazhi. The latter is circular on plan, with a domed vault and a rectangular opening at the top. A similar cave was found at Vaniyamkulam. The following were also located: (i) about fifty multiple hood-stones in a compound in Alanallur; (ii) a *topi-kal* (hat-stone) at Ungallur; (iii) a cluster of about fifty menhirs at Attapady and a few at Thachanathukara; (iv) wood-carvings at Anangandai, Angadipuram and Lakkitiperur; and (v) mural paintings at Lakkitiperur, Trikkiteri, and Tiruvegapura.

25. EXPLORATION IN DISTRICT TRICHUR.—Shri C. Chandrasekharan Menon of the Southern Circle of the Survey, during the course of his exploration in the District, brought to light: (i) dolmenoid cists without port-hole at Karunathara and Vadakkethara; (ii) urn-burials at Karunathara; (iii) mural paintings in Ayyappankavu Temple at Panjal; and (iv) fine wood-carvings (in Ariyannur Bhagavathy Temple) at Kandanissery, Mullorkara, Thekkumkara, Thiruvilvamala and Vengannallur.

26. EXCAVATION AT CHERAMAN PARAMBU (CRANGANUR), DISTRICT TRICHUR.—Shri K. V. Soundara Rajan of the Southern Circle of the Survey, assisted by Shri K. V. Raman, undertook a trial excavation at Cheraman Parambu, about 2 km. west of Cranganur on the west coast. An area of 3-metre square was excavated up to a depth of 5 m., where subsoil water-level was reached. The occupation deposit was, however, found only up to a depth of about 1·50 m. and belonged to a period extending from the thirteenth to sixteenth century A.D. Predominant were a dull-red pottery with a variety of shapes in jars and a stone ware in light cream colour, showing stamped designs like oblique strokes, criss-crosses, etc. (pl. XIII). Besides, a few porcelain pieces were also found in the middle and top layers. Among other interesting antiquities, mention may be made of rectangular roof-tiles with wedge-shaped ends, glass beads and some corroded iron-nails.

MADHYA PRADESH

27. EXPLORATION IN DISTRICTS BASTAR, BILASPUR AND RAIPUR.—During the course of his exploration in these Districts, Prof. K. D. Bajpai, Head of the Department of Ancient Indian History, Culture and Archaeology, University of Sagar, found the following: (i) medieval Brahmanical temples and sculptures at Barsur, remains of temples and sculptures at Bhairamgarh, the latter representing Kartikeya on peacock, Bhairava and Parvati, and black stone images of Vishnu and other Brahmanical deities at Dongar, all in District Bastar; (ii) pottery and coins at Malhar and a rock-inscription at Darban mentioning the name of Kumaravaradatta, a ruler of that area during the second century A.D., both places being in District Bilaspur; and (iii) pottery and microliths at Rajim in District Raipur.

28. EXPLORATION IN DISTRICT GWALIOR.—On behalf of the Department of Ancient Indian History, Culture and Archaeology of the Jiwaji University of Gwalior, Dr. K. P. Nautiyal, Director, Scindia Museum, Gwalior, assisted by Sarvashri D. L. Rajpur and Suryakant and other students of the Department, carried out an exploration of the valleys of the rivers Chhachundra, Non and Morar.

The river Chhachundra was surveyed near Makora bridge and was followed up to Antri village. About 200 m. upwards from the bridge, on the Gwalior-Tekanpur road, some scrapers and handaxes, along with a fossil bone of an animal, were noticed in the river-section. The sequence of the section at this locality shows (from bottom upwards) basal rock, cemented gravel and loose soil. The cemented gravel, having eroded at some places, had fallen from its original position.

Just adjacent to the bridge was located a ruined mound, locally known as Banjaron-ka-Tila, which yielded sherds of the black-and-red ware and of the Malwa Ware.

Early Stone Age tools, consisting of handaxes, cleavers and scrapers, were found on the surface of the banks of the Non at Dabra, where a terrace of only loose sandy-gravel was identified. The tools seem to have been brought down by floods in the river.

The most interesting discovery of tools of the Early Stone Age, however, was made on the fringes of the forest at Panihar, on the Agra-Bombay highway. The tools, which are made out of red sandstone, show a remarkable freshness. The collection includes two chopper-chopping tools, Acheulian-type handaxes, scrapers, ovates and cleavers.

Middle Stone Age tools, mainly scrapers, points, borers, etc., made out of green jasper, were obtained from the right bank of the Morar river near the dam site. The left bank showed a clear section having two cemented gravels. Of these, the lower gravel was found to be coarser while the upper was finer and yielded scrapers in a rolled condition.

29. EXCAVATION AT TRIPURI, DISTRICT JABALPUR.—In continuation of the previous year's work (*1967-68*, pp. 23-24), the Department of Ancient Indian History, Culture and Archaeology of University of Sagar, under Prof. K. D. Bajpai, assisted by Sarvashri S. K. Pandey and V. D. Jha. resumed the excavation at the site. This year's work was confined to four cuttings, named TPR-7, TPR-8, TPR-13 and TPR-14, of which the last two were freshly laid out.

In TPR-7 was found a baked brick structure which possibly was used for manu-

facturing metal implements. It had a rectangular brick-floor with an apsidal platform, having post-holes and a fire-pit nearby. On the basis of the inscribed clay-sealings obtained from this area, the structure can be assigned to the second-third century A.D.

In TPR-8, the lowest levels yielded sherds of the black-painted red ware in association with microliths. It may be recalled that similar painted sherds were also found during the 1952 excavation at Tripuri. The painted designs include zigzag and horizontal bands. A 'head-scratcher' with a hole at the top was also obtained from a pit cut into the black cotton soil.

In TPR-13 were found, at various levels: (i) a fire-pit, belonging to *circa* second century B.C. and containing pieces of a charred wooden pole; (ii) remains of a structure with an attached drain of baked bricks of *circa* first century A.D.; and (iii) a rammed floor with traces of post-holes assignable to the Kalachuri period.

In TPR-14, various ring-wells, soak-pits and storage jars belonging to the early centuries of the Christian era were exposed.

Among the antiquities obtained from this season's work, the following are noteworthy: (i) stone images of Ganesa, Mahishamardini and other Brahmanical deities; (ii) a number of terracotta figurines of human beings, animals and birds; (iii) coins — a copper coin of the Tripuri *janapada,* bearing the legend *Tripuri* in Asokan Brahmi characters, punch-marked and cast coins, inscribed lead and copper coins of the Satavahana rulers bearing the legends *Siri Satakanisa* and *Siri Satasa,* Indo-Sassanian coins and coins of the Kalachuris; (iv) seven baked clay sealings of the Bodhi kings, one of them mentioning the name of Sribodhi, while another of Mahasena who seems to have ruled over Tripuri about A.D. 350; (v) a Mauryan seal on white stone, bearing *svastika,* taurine, conch and plough symbols; and (vi) a soap-stone ring, with the figure of 'mother goddess' and *garuda* holding two serpents.

30. EXPLORATION IN DISTRICT MORENA.—In the course of exploration in the District, Dr. K. P. Nautiyal of the Scindia Museum, Gwalior, assisted by the students of the Department of Ancient Indian History, Culture and Archaeology of Jiwaji University of Gwalior, located chalcolithic and Late Stone Age sites respectively at Noorabad and Jarara, situated opposite each other on the bank of the river Sonkh. Surface exploration yielded sherds of the Malwa Ware from the former site and microliths from the latter. Besides, an arecanut bead, sling stones, and a small iron dagger belonging perhaps to the historical period were also obtained from Noorabad.

31. EXPLORATION IN DISTRICT RAISEN.—Shri V. S. Wakankar, assisted by Shri J. C. Joshi, Research Fellow of the Vikram University, Ujjain, investigated soil-sections of the *murum* pits, located 20·9 km. north-east of Bhopal on Bhopal-Raisen Road, near Bilkharia village. Three deposits were identified. Of these, the lowest resting on sandstone, comprised well-cemented dark reddish laterite; it did not yield any artifacts or fossils. The middle deposit, also lateritic, contained boulders, possibly brought from hill-tops by torrential flows. Cleavers, discoids, choppers, handaxes and cores were found in this deposit. The uppermost deposit was composed of black soil which, though immediately overlying the laterite, belongs to a much later date. Sections of two wells in the same area and of the nearby stream also showed an implementiferous gravel underlying a deposit of black cotton soil or yellow silt.

32. EXCAVATION AT PIPARIA, DISTRICT SATNA.—The Department of Ancient Indian History, Culture and Archaeology, University of Sagar, under Prof. K. D. Bajpai,

conducted an excavation at Piparia and brought to light remains of a Gupta temple, belonging to *circa* fifth century A.D. The temple seems to belong to the same style as that of Bhumra. Various parts of the door-frames and pillars of the *mandapa,* five stone sculptures representing Vishnu, Gada-devi, Chakrapurusha, etc., were obtained from the excavation.

MAHARASHTRA

33. EXCAVATION AT CHIRKI NALA NEAR NEVASA, DISTRICT AHMADNAGAR.—In continuation of the previous year's work (*1967-68,* pp. 31-32), Dr. (Mrs.) Gudrun Corvinus of the Tubingen University, West Germany, and Dr. R. S. Pappu on behalf of the Council of Scientific and Industrial Research, New Delhi, working under the general direction of Prof. H. D. Sankalia of the Deccan College Postgraduate and Research Institute, Pune, undertook excavation on the right bank of the Pravara at Chirki Nala near Nevasa. The main objective of this season's work was to expose the Acheulian horizon on a wider scale, largely with a view to determining the extent and thickness of rubble horizon and the exact area of concentration of the tools. During this season, four new trenches, numbered C, D, E and F, oriented in north-south direction and measuring respectively 10 × 3m., 4 × 3 m., 10 × 6 m. and 7 × 4·5 m., were excavated in the area around the main Trench-VII. In addition, Trenches A and B, which were dug in May-June 1968, were also further excavated. The earlier season's work had indicated that the Early Stone Age (Acheulian) horizon was represented by a deposit of rubble-gravel which was found to rest on the uneven surface of the amygdular basalt. Overlying the gravel was a fine sandy gravel containing Middle Stone Age tools.

Trench A lies at an approximate distance of 50 m. from the present bed of the river, and about 2 m. south of Trench-XII, at a level 5 m. higher than that of the latter. It was observed that the upper part of the rubble-gravel in this trench had undergone disturbance due to erosion, with the result that the tools and associated rubble had been reoriented from their original positions. The overlying Middle Stone Age tool-bearing gravel had been completely eroded away and the rubble-gravel horizon was seen directly overlain by recent sandy and silty deposits.

Trench B, which is situated at a distance of about 8 m. east of Trench A, at a level 1 m. higher than that of the latter, showed an undisturbed rubble-gravel horizon capped by hard calcareous sandy gravel.

Trench C, which lies at a distance of about 2 m. west of Trench A, showed a gorge carved out by a small nullah which had completely destroyed the rubble-gravel. A few tools, pebbles and boulders from the eroded horizon were found re-deposited at the bottom of the gorge.

Trench D, being the southernmost extension of the fresh trenches, showed the rubble-gravel horizon below the hard calcareous sandy gravel. A tusk of an elephant was recovered from the rubble-gravel horizon.

Trenches E and F, located in the northernmost part of the area under investigation, showed the bare bed-rock, characterized by the presence of more or less parallel grooves, formed by water action. These grooves suggest that there was a heavy erosional phase in the region prior to the deposition of the rubble-gravel.

So far, over seventeen hundred tools have been collected from the rubble-gravel horizon, exposed in an area of about 277 sq. m. Of these, the largest concentration

was observed in Trench VII, where over one thousand tools were recovered from an area of 97 sq. m. The tool assemblage consists mainly of various forms of handaxes, cleavers, choppers, scrapers, etc. These tools on the whole display advanced Acheulian character. The collection also includes tools which on typo-technological grounds show some of the characteristics of the Middle Stone Age industry. It appears, therefore, that the Early Stone Age industry in this region represents a late stage of the Acheulian phase. The common raw materials employed in the preparation of the tools were hard grey basalt and dolerite.

Noteworthy finds of this season, however, were the fossil-wood specimens. The pieces of fossilized wood were found lying loose in two gullies, situated at a distance of about 100 m. south-west of Trench VII. A small trench, measuring 2 × 2 m. in area, was excavated between these two gullies. A fossilized tree, with the trunk measuring 1·50 m. in length and four branches, was recovered from reddish sands.

34. EXCAVATION AT PAUNI, DISTRICT BHANDARA.—The Department of Ancient Indian History and Culture of the University of Nagpur and the Excavations Branch of the Archaeological Survey of India, headed respectively by Dr. S. B. Deo and Shri Jagat Pati Joshi, jointly excavated at Pauni. They were assisted by Drs. A. M. Shastri, A. P. Jamkhedkar, O. P. Verma and G. B. Deglurkar of the University of Nagpur and Sarvashri J. P. Shrivastava and I. K. Sarma of the Survey.

The ancient site comprises three mounds, called Jagannatha Temple Mound, Hardolala Tekri and Suleman Tekri. Of these, the Jagannatha Temple Mound, situated on the southern periphery of the Balasamudra lake, had yielded earlier, in casual agricultural operations, a few railing-pillars with carved Buddhist motifs and human figures of devotees as also a massive coping stone with inscriptions in Mauryan Brahmi characters.

The excavation revealed that (i) the original *stupa* was encased in subsequent times, (ii) the *pradakshina-patha* was constructed three times, and (iii) an elaborate stone railing with gateways at the four cardinal directions was added in the last phase. Repairs to the railing as also to the dome of the encasing *stupa* continued till about the second century A.D. The entire complex thus seems to have remained in worship from the beginning of the third century B.C. to the third century A.D.

The original *stupa,* having a diameter of 38·20 m., was built of bricks, the construction being in box-pattern with empty spaces filled in with whitish clay and brickbats. On account of the subsequent encasement of the *stupa,* it was not possible to trace the *pradakshina-patha,* if any, of this phase. Likewise, due to large-scale despoliation by brick robbers, the height of the dome also could not be ascertained. Save for a few sherds of coarse red ware, no other finds were recovered from the associated strata.

During the second phase, the original *stupa* was encased by an additional masonry resulting in an increase of 3·20 m. in its diameter. The encasement was also done in the box-pattern. Along with the encasement was laid out a *pradakshina-patha,* composed of greenish-yellow *murum,* capped by about 2·5-cm. thick lime and gravel mixed with mica. The *pradakshina-patha* still retained at some places traces of post-holes (pl. XIVA) indicative perhaps of the existence of a wooden railing. This wooden railing seems to have decayed in the course of time. Thereafter, a five-course brick wall encircling the *stupa* (pl. XIVB) was constructed to provide a base

for the wooden posts of the railing. The old *pradakshina-patha* was covered with a 15-cm. thick deposit of *murum* capped by lime, gravel and mica flakes.

This elaboration also does not seem to have continued for long. The *stupa* complex was again renovated. In this phase, the following innovations were made: (i) the wooden posts of the peripheral railing were replaced by stone pillars which rested on slabs placed right over the brick-wall (pl. XV); (ii) the *pradakshina-patha* was remodelled; and (iii) an outer railing and cardinally-placed gateways were erected. The peripheral railing consisted of stone pillars, placed at intervals of 1·15 m. Some of these were found to be ornamented with carved figures of *yakshas*, lotus medallions, royal elephant processions, etc. Beyond this peripheral railing was the 3·70 m. wide *pradakshina-patha* made up of 10-cm. thick slabs. The outer railing consisted of pillars placed 1 m. apart over undressed slabs. Each pillar had four sockets, the lowermost being rectangular and the upper three lenticular in section. Some of the pillars were beautifully decorated, with motifs of lotus medallions (pl. XVIA), vegetal friezes, human devotees standing in veneration, *stupa* with railing, *bhadrasana, kalpa-vriksha, Bodhi*-tree, parrots and floral friezes. One of the pillars bore a name-label of Naga Muchalinda. The human sculptures as also the decorative patterns are in the Sunga idiom. These railing-pillars were surmounted by heavy coping-stones, one of which had a lovely lotus medallion, carved in relief and bearing an inscription in Asokan Brahmi, informing of its being a gift of Visamita (Visvamitra).

During this renovation, gateways were also erected at cardinal directions. One such complex was found in the western sector, with traces of similar constructions in the east and the north. The western gateway was found to have been planned on the same pattern as that of Bharhut, the width of the entrance being 2·80 m. The find of a beautifully fluted capital (pl. XVIB) of a pillar with a socket indicated that free-standing pillars were also included in the gateway complex.

Repairs to the railing seem to have continued till about the late Satavahana period as attested by palaeographic and numismatic evidence. By about the third century A.D., this great Hinayana centre of Buddhism seems to have fallen into ruins.

That the entire monument was the result of munificence from various individuals is attested by numerous inscriptions on *suchis*, pillars and coping-stones. The Muchalinda railing-pillar (pl. XVIIA) inscription reads *'Mahayasa antevasini yavali (pi ?)ya danam*, while another pillar, showing a devotee standing in reverence, flanked by two female *chauri*-bearers, contains a record *'Nagasa pachanikayikasa'*. Some of the inscriptions on the *suchis* read, *'Yakhadinaya pavajitaya pasado', 'Agidevaya', 'phaguya pavaji(taya)', 'Nalaya pasado', 'Hiranakara utarabutino cha Budhadevasa cha danam'* (pl. XVIIB) *'pavajitasa utarakasa pasado'*. The coping-stones also bear inscriptions some of which have the following text: *'Pavajitaya Visamitaya danam hotu sukhaya sava satana'*, and *'Pusagutasa Vachhiya cha pasado'*. Yet another railing-pillar tells that it was the gift of Valanaka, the son of *Gahapati Nandaka*. Palaeographically, these records range between third century B.C. and second century A.D.

The human sculptures on the railing-pillars (pl. XVIII) showed many features characteristic of the Sunga school. The female figures had diaphanous garment, tucked in a bunch at the side, elaborate *mekhala* and heavy beaded *valayas*. They are carved in low relief but their artistic coiffure is reminiscent of Bharhut. The males had short *dhotis* with the ends gathered in front and let loose up to the ankle,

beaded *valayas,* ornamental armlets and coiffure embellished by buns and bunches arranged with the help of pearl-*jalis.*

Among stray sculptures, mention may be made of (i) the lower part of a Yaksha figure with a *dhoti* tucked between the legs and a scarf-like piece tied to the waist, and (ii) a head, probably of a *yakshi,* showing the arrangement of hair in triple buns in typical Sunga style. The singular sculpture with a name-label is that of Naga Muchalinda, which shows the Nagaraja, coiling its majestic body around the *bhadrasana* and protecting it with its multiple hoods.

Associated with these sculptural and epigraphical remains were coins (punch-marked, Satavahana and Kshatrapa) and a few beads of garnet, agate and carnelian.

The ceramic evidence showed the use of a coarse red ware in the earlier levels and of the N.B.P. Ware in the levels associated with the final phase of the *pradakshina-patha,* indicating thereby that the *stupa* was constructed before the appearance of the N.B.P. Ware at the site. The topmost débris yielded a few sherds of the Red Polished Ware which confirmed, along with the numismatic evidence, the desertion of the *stupa* site around third century A.D.

35. EXPLORATION IN DISTRICT CHANDA.—During the course of his exploration in the District, Shri B. K. Sinha of the South-eastern Circle of the Survey discovered several Stone Age sites. A detailed list of the sites with reference to the river-valleys and the tool-types discovered is given below :

Site	*River-valley*	*Tool-types*
Andhli	Satti Nullah	Fluted cores, blades and points
Arhat Tondi	Satti Nullah	Blades, lunates and points
Dungar Tamashi	Khobra-Gadi stream	Fluted cores, blades and burins
Gevardha	Satti Nullah	Blades and cores
Kurul	Satti Nullah	Leaf-shaped points, fluted cores and blades
Mojhari	Wainganga	Fluted cores and points
Munta Gura Ritah	Satti Nullah	Blades, points and lunates
Mainpur Cheek	Satti Nullah	Fluted cores and triangles
Wadegaon	Satti Nullah	Cores, lunates, points and blades

36. EXPLORATION IN DISTRICT DHULIA.—Shri S. R. Rao of the South-western Circle of the Survey re-examined the previously explored mounds at Hingoni Budruk, Kaotha and Khaparkheda (*1960-61,* p. 26) and found some specimens of Late Harappan red and buffish wares, comparable to those of Rangpur II B and Lothal B. Some of these were found carelessly painted in black or light chocolate. The co-occurrence of the Late Harappan and Sawalda Wares in the Tapti Valley suggests that the Late Harappans came in contact with a chalcolithic folk using the Sawalda Ware in the Tapti valley.

37. EXPLORATIONS IN DISRICT NAGPUR.—During his exploration in the District, Shri Lal Chand Singh of the Central Circle of the Survey discovered: (i) a Late Stone Age site at Bokhara; (ii) megalithic stone-circles at Chakki Khapa, Deolimet and Dudha; and (iii) a Hemadpanthi temple at Chandarpur.

The Curator, Central Museum, Nagpur, re-surveyed the area around Vyad (*1961-62*, p. 101) and located about twenty megalithic cairn-circles in the vicinity.

38. EXCAVATION AT KHAPA AND GANGAPUR, DISTRICT NAGPUR.—In continuation of the last year's work (*1967-68*, pp. 33-34), the Department of Ancient Indian History and Culture, University of Nagpur, under Dr. S. B. Deo, with assistance from Dr. A. P. Jamkhedkar, carried out excavation at Khapa and Gangapur.

At Khapa, three stone-circles, numbered I (diameter : 25·5 m.), VII (diameter : 13·6 m.) and IX (diameter: 12·5 m.) were excavated. The peripheral stones in each case were found to be placed right over the disintegrated rock-surface and the enclosed area was filled upto a height of about 1·5 m. with sticky black clay and pebbles, the pebble-filling being relatively thicker at the periphery. In the centre of each of the stone-circles were found, placed right over the natural rock-surface, vases with flaring or funnel-shaped mouths in red ware, bowls in black-and-red ware, and vases with globular body in coarse red ware. A noteworthy shape in the red ware was the stemmed cup or chalice. No painted pottery was encountered in any of these monuments. A few bones, badly crushed, were found in some pots. In the filling proper were found etched and plain beads of carnelian, agate, jasper and crystal. Among iron objects, mention may be made of lamps with vertical handles, axes with rings, spearheads, daggers and knives (pl. XIXA). Copper was represented by bangles, bowls, ear-ornaments and bell-shaped hollow vessels (pl. XIXB). Some of the last-mentioned objects contained bones of animals of the *equidae* family.

The site of Gangapur, about 750 m. south-west of Khapa, is virtually the continuation of the latter, and contains about a score of stone-circles. Two of these were excavated to supplement and cross-check the evidence from Khapa. These stone-circles were located right at the foot of a series of hills and had an average diameter of 11 m. each. The structural pattern as also the ceramic content were found to be similar to those at Khapa. Iron objects recovered from these megaliths consisted of axes with ring-fasteners, sword fragments, daggers, lamps, nail-parers, and double-edged adzes. Copper was represented by bowls, shallow lamps, bangles and a series of interlocked thin rings. Etched and plain beads of carnelian, agate and jasper formed other finds.

39. EXCAVATION AT TER, DISTRICT OSMANABAD.—Excavation was resumed (*1667-68*, p. 35) at the site for the second season under Dr. M. G. Dikshit, Director, Department of Archives and Archaeology, Government of Maharashtra. As a result of this year's work a large *stupa* with a wheel-shaped plan was exposed.

The excavation yielded many non-Indian objects such as carnelian seals, clay *bullae*, special types of lamps, etc., which have also been reported from sites in eastern India. As mentioned in the *Periplus*, exportable goods were first brought to Ter and subsequently transferred to the ports on the western coast, *via* the route passing through Paithan. As an evidence of the extile trade, a number of vats for dyeing cloth were excavated this year. A coin of Pulumavi indicated the latter half of the second century A.D. as the probable date of the *stupa*.

Another important discovery was that of an apsidal temple built of bricks, located

not far from the Trivikrama Temple. The temple enclosed a *stupa* which was repaired and buttressed, at least on two occasions, with a brick platform. The temple is dated by a coin of Pulumavi. Excavation in front of the temple showed that it had a wide porch supported by wooden pillars.

40. EXPLORATION IN DISTRICT PUNE.—Prof. H. D. Sankalia and Drs. S. N. Rajaguru and G. G. Majumdar of the Deccan College Postgraduate and Research Institute, Pune, and Shri V. S. Wakankar of the Vikram University, Ujjain, discovered the remains of *Bos namadicus*, and Early Stone Age tools in the gravel-deposits opposite Inamgaon. At a site, about 1·60 km. further upstream, Shri Lala Aditya Narain discovered a deposit of fossil soils. Such a deposit was noticed for the first time in this area. The soil-samples are being examined by Dr. Vishnu Mittre whose provisional report indicates the presence of pollen grains.

Dr. Ansari discovered a large factory-site, probably of the Late Stone Age, near Inamgaon.

41. EXCAVATION AT INAMGAON, DISTRICT PUNE.—The Deccan College Postgraduate and Research Institute, Pune, undertook an excavation at Inamgaon located on the right bank of the Ghod river, a tributary of the Bhima. The work was carried out by Drs. Z. D. Ansari and M. K. Dhavalikar, under the general direction of Prof. H. D. Sankalia. They were assisted by Sarvashri Abhvankar. P. R. Kulkarni, S. K. Kulkarni, Y. S. Rasar, R. B. Sapre, R. B. Warke, Dr. (Miss) Malti Nagar and Dr. (Miss) Hill. The ancient site (pl. XXA) covered an area of approximately 500 m. sq. Since no occupational deposits of the historical period are present at this site, it was thought that here a horizontal excavation could be possible without much cost and labour. The main objective of the work was to obtain house-plans of the entire settlement. The excavation, therefore, was so planned as to lay bare as many complete houses as possible and to relate the finds, including pottery, to the respective houses.

The excavation revealed two cultural periods, represented respectively by the Malwa and the Jorwe Wares; the latter Period was further sub-divided into two phases. The people of the former (the Central Indian Chalcolithic Culture) Period seem to have first settled only on the easternmost mound. Subsequently, however, they occupied the entire area.

Of Period I, i.e. of the Central Indian Chalcolithic (Malwa) Culture, only one house was partially exposed. Rectangular on plan, it had dwarf mud walls supporting screens of reed plastered with mud. Within the house were found two large circular pits, dug at different levels. The lower of these was definitely meant for storing grains as attested by the discovery of lumps of disintegrated grains of *jowar* from a small niche inside the pit. Incidentally, this is the earliest discovery of *jowar* in Maharashtra or, for that matter, in India. The other pit, on the higher level, was also circular on plan but showed some post-holes on the sides, indicating its use for living as well. It is quite likely, though not proved, that its original use might also have been for storing grains. It is interesting that in the vicinity of the site one can still see people living in pits.

Of Period II, i.e., of the Northern Deccan Chalcolithic (Jorwe) Culture, plans of twenty-two houses were laid bare. All of these were very closely situated. Of these, only one belongs to the early phase. This house, a part of which still remains unexcavated, was rectangular on plan and measured 4·25 × 4·50 m. in area, with the larger axis along north-south direction and an entrance on the west. Dwarf walls with wattle-

and-daub screens were also noticed in this house. Along the northern wall were noticed a series of post-holes where a large piece of completely burnt wooden post was found. Near the western wall was a cylindrical pit (1·10 m. in diameter and 70 cm. in depth) used perhaps for storing grains. Besides, four flat stones, intended for supporting huge storage jars, and a few rubber-stones were also found in this house.

Of the twenty-one houses of the late phase of this Culture, one was round on plan (pl. XXB), with an inner diameter of 3 m. It had a 40-cm. thick wall, retaining traces of nine post-holes, 50 to 55-cm. apart. One of the post-holes was found rammed with stone chips. Two groups of four flat stones and a burnt patch, possibly of a hearth, were found inside the house. The floor was made of black clay and plastered successively with a clay-solution. In another house was noticed a courtyard, having a floor made of rammed *murum* and fine yellow silt. Within the courtyard was a squarish hearth close to which were found two unbaked clay male figurines. It is inferred that the hearth was built for some special occasion on which male gods were invoked. At another place on the site was a circular pit covered with broken pots and ash—perhaps a pottery-kiln.

As regards the finds, Period I yielded only pottery and blades. While many of the characteristic shapes of the Malwa Ware were recorded, the stumpy goblet or the chalice was not encountered. A new type consisted of a vessel with a tubular spout. Besides, coarse grey and red wares and a little amount of black burnished ware were also found. In the last-mentioned ware, a distinctive handled bowl is noteworthy.

The pottery of the early phase of Period II was represented by the characteristic Jorwe Ware, showing the ubiquitous concave-sided carinated bowls and the spouted *lotas*. In the late phase of this Period, the fabric became coarser with a dull-red surface colour and the carinated bowl gave place to the convex-sided bowl. A few carinated bowls with outcurved beaded rim, however, still continued. Associated with this were the coarse red and grey wares. Huge hand-made storage jars with incised and applique patterns and several fragments of a sandy ware were also found. A new ceramic industry of the late phase was the black-and-red ware, of which at least one bowl was found in almost every house.

Besides the two unbaked male figurines mentioned above, a few figurines (mother goddesses?, pl. XXIA) of baked clay were also found. These have stumpy arms and legs, pendant breasts and crudely shaped heads. Other terracotta figurines included those of the bull, boar and horse. The bulls show prominent hump, short horns and block legs.

Blades, produced by the crested-ridge technique, were found in a large quantity in both the Periods. While most of these are comparatively small, the longest one measures over 7 cm. in length. In addition, ground or polished stone axes, slingballs and mace-heads (pl. XXIB) were also found. It is possible that the axes were ground locally on huge querns, several of which were obtained from the excavation. Unlike the querns at Navdatoli or Nevasa, these were made from the local basalt and had their sides invariably dressed and bottoms made flat.

Of the copper objects, only a fish-hook, fragments of bangles and a pair of tongs have so far been found. The latter were found lying near two small cylindrical crucibles and may have belonged to a goldsmith.

Bone tools consisted of a few points and punches of antler. Among other finds, mention may be made of bangles of shell, ivory and copper, beads of ivory and semi-precious stones and reel-like terracotta ear-studs. A factory-site of bead industry,

evidenced by the occurrence of a large number of unfinished beads, was noticed 200 m. away from the habitation area.

The inhabitants seem to have had a mixed economy of farming and hunting: charred grains of wheat, lentil, *jowar* and possibly rice, as suggested by Dr. Vishnu Mittre, have been obtained from the deposits of both the periods. The deer was possibly the most hunted animal, for its bones were found almost in every house.

No evidence relating to the burial practices of Period I was obtained. However, belonging to the early phase of Period II, two extended burials were exposed. Of these, one belonged to a child and the other to an adult. The skeleton in each case was placed in a small pit, in a north-south direction. The child seems to have been buried most unceremoniously, for no funerary objects accompanied the dead body. In the other burials (pl. XXIIA), a carinated bowl and a spouted vessel, both of the black-painted Jorwe Ware, were found. It is significant that both the burials existed within the house-complex.

During the late phase of Period II, children were buried in urns while adults continued to be inhumed (pl. XXIIB). In the former case, usually two urns of grey ware were placed horizontally, mouth-to-mouth, in a pit, although examples of single-urn burials were also encountered. Normally these burials were fractional, but in one case an articulated skeleton was also found. Usually a bowl and a spouted vessel accompanied the burial urns. Adults were buried in pits in which the whole skeleton was placed along with the funerary pottery. Both the types of burials were found within the habitation area, either in the courtyard or in one of the rooms of the house.

42. EXPLORATION IN DISTRICT SATARA.—The Director of Archaeology and Archives, Government of Maharastra, explored a small mound at Wai and found antiquities assignable to the Satavahana period.

MANIPUR

43. EXCAVATION AT KHANGKHUI, MANIPUR.—During the course of an exploration carried out by Shri O. K. Singh a Stone Age rock-shelter was discovered at Khangkhui in Ukhrul Sub-Division. The site is located about 11 km. south-east of the Ukhrul town, on the Ukhrul-Chachhat road, on the northern slope of the Nungsong Machung Hill. A trial trench yielded a handaxe and a cleaver from the lower deposit, and points, borers, scrapers, blades, burins, cores and a few bone points from the upper (pl. XXIII). The stratigraphic horizon of these categories of tools, however, requires confirmation by further work.

MYSORE

44. EXCAVATION AT HUNUR, DISTRICT BELGAUM.—With a view to ascertaining the structural details of a new type of megalithic tomb, Shri S. R. Rao of the South-western Circle of the Survey, assisted by Sarvashri K. M. Srivastava, A. Sundara, P. Narayan Babu and S. A. Sali, undertook a small-scale excavation at Hunur, located on the left bank of the river Ghataprabha, a tributary of the Krishna. The work was essentially a salvage operation, necessitated by the likely submergence of the site, resulting from the construction of the dam at Hidkal. Earlier exploration had revealed that the area between Hidkal and Hattargi was dotted with megalithic monuments, most of

which were found ransacked by treasure-hunters. However, one of the largest megaliths, in which the capstone was found intact (pl. XXIVA), was selected for excavation.

The megalith consisted of a huge cairn entombing three cists enclosed by stone-circles and platforms (pl. XXIVB). Two of the cist-tombs were approached by a passage running in south-north direction. Cist 1 was square on plan (2·5 m. sq.) and was surrounded by a circle of dressed stones, laid in six courses and further enclosed by a rectangular platform (15 × 15·60 m.) of rubble lined with stone-slabs. It was approached by a passage (pl. XXVA), the walls of which were made of upright stone-slabs and the floor of rammed rubble. Measuring 40 to 50 cm. in width, the passage was blocked at the southern end by an upright slab.

Cist 2 was rectangular on plan (3·25 × 1·30 m.), and was enclosed by a stone-circle built over the rubble bed in a single course and further enclosed by a platform (11·40 × 9·75 m.). It was also approached by a passage (pl. XXVB), of which the walls were built of dressed stones of smaller size, laid in four courses. On the southern end of the passage was another cist (labelled Cist 3), measuring 3·55 × 2·95 m. Two dressed stone slabs were found placed in a raised portion on the western side. In addition, a small circle was also found on the western side of the passage. Below one of the orthostats was noticed a pit, about 30 cm. deep, in which were found ash and a few bones. Besides, some sherds of the Black-and-red Ware and red ware were also found.

In addition to the remains mentioned above, which were confined to the cists, a large number of pot-burials were encountered on the platforms outside the stone-circles. The fact that the rubble tumulus had been disturbed at places where the burial pots were found indicates that the megalith was in continuous use for a pretty long time.

The antiquities obtained from the burials are only a few in number. No iron object was found in any burial. However, a copper bell, with a rectangular base and a suspension-loop at the top, was recovered from one of the pot-burials. The use of the Black-and-red Ware also seems to have been fairly limited, the only shape of vessel that could be reconstructed from the fragments obtained being a bowl. Wide-mouthed jars of a coarse red ware seem to have been mostly used for child-burials.

45. EXPLORATION IN DISTRICTS BIJAPUR AND GULBARGA.—In the course of his exploration in these Districts, Shri K. Paddayya of the Deccan College Postgraduate and Research Institute, Pune, located several sites belonging variously to Early and Middle Stone Ages, and to the blade-tool assemblage.

An Early Stone Age site was discovered at Gulbal (Locality 2) on a feeder stream of the Hunsgi in Taluk Shorapur. Here, the section, which was found exposed on both banks of the stream for over half a kilometre, showed the basal weathered shale, overlain by bouldery conglomerate, varying from 1·5 to 2 m. in thickness. The clastic components were mainly of limestone, and only rarely, of chert and granite. Travertine formed the cementing material. At some places, the conglomerate was found overlain by a 50-cm. thick deposit of blackish-brown silt. About seventy artifacts (three-fourths of them being *in situ*) were obtained from the conglomerate. Limestone formed the chief raw material of these artifacts, thus imparting a distinctive character to the assemblage. The tool-types included handaxes, cleavers, unifacial and bifacial pebble tools, cores, flakes of plain and prepared cores, etc. That this assemblage is of the Acheulian facies is revealed by the refined character of the manufacturing techniques.

Of the Middle Stone Age, the sites explored were all stratified, and could be classified under two groups: (i) sites discovered on the Don river in Taluk Muddibihal, in

District Bijapur and in Taluk Shorapur, District Gulbarga and on the Hunsgi nullah and its feeders in Taluk Shorapur, viz. Barnal, Bapperga, Chehnur, Devapur (near Hunsgi), Gulbal (Locality 1), Hebbal Buzurg Hunsgi (Localities 1 and 2), Kaldevanhalli (Localities 1, 2, 3 and 4), Maskanel, Matkandevanhalli, Meralbhavi (Localities 1 and 2), and Wajal; and (ii) sites found at Tumkur and Bhima road bridge in the Taluk Shahpur and at Devapur and Kollur in Taluk Shorapur, both in District Gulbarga.

The composite stratigraphy, as reconstructed from the sections observed at the sites of the first category, is as follows. The basal stratum consisted of either weathered shale/limestone or travertine deposit. It was overlain by a conglomerate deposit (the one found at Bapperga being a para-conglomerate) varying from 50 cm. to 2 m. in thickness. It was pebbly in character, and was mainly composed of limestone components. Chert, granite, quartz, shale and dolerite formed the subsidiary rock units. The matrix-material was either travertine or sand and silt, the former always acting as the cementing medium. At some places, the conglomerate showed distinct signs of cross-bedding. This sediment was unconformably overlain by a 1 to 2 m.-thick deposit of yellowish brown silt; and the latter, in turn, was capped (at some places conformably) by a blackish brown silt, measuring up to 2 m. in thickness.

At all the places mentioned above, the conglomerate yielded a large number of Middle Stone Age artifacts of chert. The types included scrapers, points, borers, etc., made on plain or prepared flakes, and flake-blades. At Kaldevanhalli (Locality 2) the conglomerate also yielded molluscan shells.

The composite stratigraphy of the sites of the second category was as follows. The lowest stratum consisted of fully weathered granite. It was overlain by pebbly conglomerate varying from 50 cm. to 1·5 m. in thickness. The latter deposit was composed variously of granite, limestone, chalcedony, quartz, chert (similar to that of the high-level gravels), quartzite, dolerite, schist, etc. Sand and silt formed the matrix while travertine the cementing material. The conglomerate was overlain by a 1 to 3 m.-thick deposit of yellowish brown silt; and the latter, in turn, was superimposed by a blackish brown silt, varying in thickness from 1 to 1·5 m.

The conglomerate-deposit yielded large quantities of Middle Stone Age artifacts, comparable with those obtained from the first group of sites. The most significant feature of the present sites, however, is the occurrence of pebbles and cobbles of chert in the conglomerate-deposits. Petrologically, this chert is quite similar to the one forming the high-level gravels exposed at Devapur, Kollur, Gundianur, Gudihal and several other places on the Krishna and Bhima rivers. These cherty gravels lie high above (8 to 15 m.) the present flood levels of the rivers. On an earlier investigation (*1967-68*, p. 36), it was tentatively concluded that they were formed contemporaneously with the Middle Stone Age tool-bearing conglomerates of the area. The present evidence, however, would demand a revision of this view. The quantitatively smaller proportion of chert pebbles and cobbles in the tool-bearing bed-level conglomerates indicates that this particular material was derived from the high-level gravels through natural processes. Similar evidence was obtained by Shri Paddayya at a few places in the adjoining Makhtal Taluk of District Mahbubnagar. The latter deposits formed one of the several sources of débris for the formation of bed-level conglomerates. In short, the present evidence favours the conclusion that the high-level gravels were formed in pre-Middle Stone Age times. Further, it would be seen that they were deposited more as valley-slope or floor fillings than as streamlaid bodies. The exact age of their formation, however, still remains to be settled.

Of the blade-tool industry, stratified sites were discovered at Hunsgi (Locality 3), Benhatti, Gulbal (Locality 3), and Meralbhavi (Localities 1 and 2), all lying on feeder streams of the Hunsgi nullah.

Technologically and typologically, the blade-tool industry of this area could be compared with the Upper Palaeolithic industries of Europe and West Asia. Chronologically, it seems to belong to the early part of the Holocene and occupies an intermediary position between the Middle Stone Age and the Late Stone Age industries.

The cliff sections at these places reveal the following sequence. The lowest stratum was formed of pebbly limestone conglomerate. As at Meralbhavi, this deposit yielded Middle Stone Age artifacts. It was unconformably overlain by a blackish brown silt, measuring from 1 m. to 2·5 m. in thickness. This sediment showed several distinct lenses of pebbly gravel which consisted of angular to sub-angular and sub-rounded fragments of limestone, shale, chert and dolerite, and varied in thickness from 5 to 30 cm. The rock components were set in a matrix of sand and silt. These lenses yielded considerable quantities of artifacts of the blade-tool industry. The raw material is almost wholly chert. The assemblage was characterized by the fluted core technique. The types included simple and retouched blades, blunted blades, points, burins and flake-scrapers.

46. EXPLORATION IN DISTRICT DHARWAR.—A detailed village-to-village survey in Taluks Dharwar and Navalgund, undertaken by the Department of Archaeology, Government of Mysore, resulted in the discovery of the following important temples: (i) the Kalamesvar temple and Neminatha Basti at Amminabhavi, belonging roughly to the eleventh century A.D.; (ii) the Mallikarjuna and Sankaralinga temples at Narendra, assignable to later Kadamba rulers; and (iii) the Yellamma temple, with its interesting paintings, at Uppinabetageri as also some Saiva-*dvarapala* sculptures at the same locality, dating to the Chalukyan period.

In the course of his exploration in Naragund Taluk, Shri A. Sundara of the South-western Circle of the Survey discovered a number of neolithic and megalithic sites on the banks of the Malaprabha river and its tributaries, Bennihalla and Jaulhalla. At Arashangodi, Bhairanahatti, Halgop, Kurgovinkop, Lingadhal and Shirol, neolithic grey ware of Maski fabric, fragmentary ground stone axes, parallel-sided blades and fluted cores of chert and, occasionally, lime-encrusted bones of animals were found. Megalithic Black-and-red Ware and a plain red ware together with disturbed burials were also noticed at Kurgovinkop.

Remains of a temple of the Rashtrakuta period were noticed at Wasan, while at Konnur a *garbhagriha* of a Siva temple with a stellate plan, probably of Hoysala period, was found.

47. EXPLORATION IN DISTRICT GULBARGA.—The Department of Ancient Indian History and Culture of the University of Karnatak conducted a preliminary survey of the newly-discovered Buddhist site at Sannati, situated on the bank of the river Bhima in Taluk Chittapur. An area of about 8 sq. km. was found strewn with bricks, potsherds and inscribed and sculptured slabs, datable to second-third century A.D. Besides, the remains of a *chaitya* were also observed here.

48. EXPLORATION IN DISTRICT MYSORE.—Shri C. Krishnamurti of the Southern Circle of the Survey brought to light megalithic burials at Airahalli, Kalatpur, Lakkur and Kelasanagur in Taluk Hunsur.

49. EXCAVATION AT BUDHITITTU, DISTRICT MYSORE.—Shri K. V. Soundara Rajan of the Southern Circle of the Survey, assisted by Sarvashri K. V. Raman and C. Krishnamurti, carried out a trial dig in an open field at Budhitittu, located on the southern bank of the river Swarnamukhi, and found the remains of occupation belonging to the degenerate stage of the neolithic culture. Thick burnished grey and brown wares, along with a limited quantity of megalithic Black-and-red Ware, were obtained from the dig, indicating a stage of culture when the intrusive Megalithic Culture overlapped with the local Neolithic Culture. A noteworthy type in the burnished pottery group consisted of head-rests, already known from T. Narsipur. No neolithic celts were found from the excavation, although quite a few were collected from the surface.

50. EXPLORATION IN DISTRICTS NORTH KANARA AND SOUTH KANARA.—With a view to locating ancient ports and inland settlements, mentioned in the early Greek and Buddhist literature, the South-western Circle of the Survey, under Shri S. R. Rao, assisted by Shri A. Sundara, explored the west coast from Goa to Udipi. Apart from the identification of early historical settlements, datable to the third century B.C., at Banavasi and Udyavara, neolithic pottery and stone implements were found at Honavar and Gokarna, which extends the zone of neolithic influence on to the west coast, across the Sahyadri mountains.

At Honavar, the Naoura of the *Periplus,* a ground stone axe was found near the ancient Siva temple. At Gokarna, which is identified with Parasuramatirtha, some rock-shelters were located on the hill-slopes near Ramatirtha, wherefrom a few sherds of a coarse grey ware, similar in fabric to the neolithic grey ware of Maski, were collected. The discovery of a neolithic site at Guddey Mardi near Shimoga suggests a westward movement of the neolithic settlers of the Tungabhadra basin.

Banavasi or Vanavasi finds mention in early Buddhist literature. The *Thera* named Rakkhita (Rakshita) is said to have been sent by King Asoka to Vanavasi after the conclusion of the Great Council in Pataliputra. The *stupa*-mound, partially excavated earlier, had not yielded any datable objects of the pre-Christian era. A careful survey of the various mounds and the exposed sections, undertaken in October-November, 1968, yielded the megalithic Black-and-red, black-polished and red wares, and some moulded bricks. The latter were found at a depth of about 6 m. in a mound near the Chariot Street. This ancient settlement seems to have been skirted by a massive mud fortification-wall. The ceramic evidence clearly indicates that Banavasi was a flourishing city in the third century B. C., if not earlier.

Udyavara lies 6·5 km. south of Udipi and covers an area of approximately 500 × 100 m., extending from the Ganapati temple to the Panchayat Office of the village and even beyond and enclosing within its orbit a well-defined citadel known as Balergudda, with at least three entrance gateways, and a 'lower town' facing the sea. Large quantities of pottery, consisting of the megalithic Black-and-red Ware, black-polished, plain red and cream wares, were obtained from the lower town and sections of the citadel-mound. The discovery of the remains of a Siva temple and a citadel of the early historical period indicates that the scene of action mentioned in the Greek Farce with Kannada passages known as the *Oxyrhynchus Papyri* was the ancient port of Udayavara. Although a chert blade and sherds of a cream ware were found in the sections of the Balergudda, the evidence is too meagre to indicate a chalcolithic occupation at the site.

ORISSA

51. EXPLORATION IN DISTRICT MAYURBHANJ.—Under the auspices of the Prehistory Laboratory, Department of Anthropology, University of Calcutta, Dr. Asok K. Ghosh, assisted by Shri A. N. Basu, revisited Baripada and Kuliana sites and made fresh observations on the sections and the tool-assemblages.

In the thick deposit of detrital laterite, at variable depths, were found Acheulian bifaces and choppers in different stages. The detrital laterite was found to be succeeded, after a break, by a deposit of brown clay, varying in thickness from place to place. At places, a *kankar* layer was noticed at the junction between the above-mentioned deposits. This junction-deposit yielded a flake industry, as evidenced by the *in situ* occurrence of different types of scrapers (round scrapers, 2; side-scrapers, 4; end-scrapers, 2) and a number of undifferentiated flakes. Although most of the tools are on flakes, core-implements were not altogether absent. The upper brown clay-bed yielded similar flakes, as found in the earlier deposit, but the industry showed a tradition of punch-blade technique. The raw material of this industry, however, remained the same, viz. quartzite and quartz. Out of the total collection of sixteen artifacts, thirteen were on blades and three on flakes.

52. EXPLORATION IN DISTRICT PURI.—The Directorate of Cultural Affairs, Government of Orissa, explored Bualigarh, a historical fort situated in the Khurda Sub-Division, and found remains of eleventh-twelfth century A.D.

PUNJAB

53. EXCAVATION AT SANGHOL, DISTRICT LUDHIANA.—With a view to ascertaining the sequence of cultures in the area, the Department of Archaeology and Museums, Government of Punjab, under Sarvashri S. S. Talwar and R. S. Bisht, conducted excavation at Sanghol. The ancient mound rises to an impressive height of about 25 m. and covers an area of roughly 300-m. square, almost all of which is built over by the modern village. The present excavation, confined to a 6 × 12 m. cutting, was done on the western fringes of the mound. Although the natural soil has not yet been reached, six cultural periods have so far been recognized.

Period I belongs to what appears to be a late phase of the Harappa Culture. Mud and mud-brick structures, circular corn-bins (pl. XXVIIIA and XXVIIIB), and hearths or *tandoors* were met with in the deposits of this Period. The pottery (pls. XXVI, XXVIIA and XXVIIB) showed some resemblance to the Harappan Ware in treatment and technique but lacked classical types like the S-shaped jars, beakers, graceful dishes-on-stand, etc. Similarly, seals, chert blades and also disc beads, characteristic of the classical Harappan *milieu* were conspicuous by their absence. Both in fabric and form, the pottery shows striking similarity with that obtained from Bara (*1954-55*, pp. 9-11, pls. X, XI). The large- and medium-sized storage jars were roughened in the lower part, the slipped upper surface being decorated diversely with painted linear or naturalistic motifs or incised designs. Among the other finds, mention may be made of beads of steatite, faience, agate and terracotta, bangles of faience, bone points and terracotta cakes of lenticular section.

Period II was characterized by the occurrence of the Painted Grey Ware and plain grey, black-slipped and associated red wares. A solitary sherd of black-and-red ware

was also found. Within the limited area of the trench, no structures of this period could be exposed.

Period III was represented by the use of the black-slipped ware, normally associated with the N.B.P. Ware. No sherd of the N.B.P. Ware itself, however, has so far been obtained from this cutting. Other finds included terracotta figurines, beads, etc. A mud-brick structure was also exposed.

Period IV was distinguished by the occurrence of Sunga style terracottas. Ceramics of the Period did not show any change from those of the preceding one.

Period V was associated with the finds belonging to the Kushan and Gupta periods. Several structures of mud bricks and baked bricks, drains, sullage water-jars and ovens were exposed in the various levels of this Period. Noteworthy finds included: (i) coins of the Indo-Parthians, Kushans, some tribal states; (ii) terracotta coin-mould of Gondophares (Gondopharnes); (iii) three sealings, two of which bear legends in early Gupta Brahmi; (iv) terracotta figurines; and (v) votive tanks. A Buddha figure of Mathura school (pl. XXVIIIC) obtained from surface may belong to the same Period.

Period VI, represented by a thin occupation in the present cutting, was marked by the occurrence of pre-Mughal Glazed Ware and other associated finds.

54. EXPLORATION IN DISTRICT RUPAR.—During the course of an exploration in Tahsil Kurali of the District, Shri D. K. Handa found medieval pottery at: (i) Chitamala, about 3 km. west-south-west of Kurali; (ii) Khansala, about 12 km. south-east of Kurali; (iii) Rattangarh, about 12 km. south of Kurali; (iv) Sialba, about 9 km. east of Kurali; and (v) Vasara, about 2 km. south-east of Kurali.

RAJASTHAN

55. EXCAVATION AT NOH, DISTRICT BHARATPUR.—In continuation of the previous work (*1963-64*, pp. 28-29), the Department of Archaeology and Museums, Government of Rajasthan, resumed excavation at Noh. The main objective of this season's work was to check up the stratigraphical sequence of the Ochre-colour pottery, the black-and-red ware and the Painted Grey Ware. The work was conducted by Sarvashri V. S. Srivastava and Shyam Nandan. A cutting, measuring 5 × 8 m., was taken on the western slope of the mound.

The excavation revealed that the earliest deposits at the site (Period I) yielded Ochre-colour pottery, of which only seven sherds were found within an area of 3 × 3 m. Occupation strata of Periods II and III, marked respectively by the use of black-and-red ware and the Painted Grey Ware was not available in the present cutting. Period IV was distinguished by the use of the N.B.P. ware and its associated pottery. In the deposits belonging to this Period, mud-brick walls, drains of baked bricks and ovens were exposed. Period V was characterized by the occurrence of pottery impressed with *triratna* designs and terracotta animal and human figurines, including *Matrikas*, belonging to Sunga and Kushan periods.

56. EXCAVATION AT BAGOR, DISTRICT BHILWARA.—In continuation of the previous year's work (*1967-68*, pp. 41-42), the Deccan College Postgraduate and Research Institute, Pune, and the Department of Archaeology and Museums, Government of Rajasthan, resumed excavation at Bagor. The work was carried out under the direction of

Dr. V. N. Mishra of the Deccan College, assisted by Shri Vijaya Kumar of the State Department of Archaeology.

Two cuttings, labelled F and G and measuring respectively 20 × 2 m. and 20 × 4 m., were laid out to enlarge last year's cutting E, on its northern and southern sides. The excavation revealed that the occupation strata (1·70 m. in thickness) belonged to three cultural phases.

Phase I, with a deposit ranging between 50 and 80 cm. in thickness, was characterized by microliths (pl. XXIX), animal bones, stone-paved floors and stone alignments indicating circular huts. In the lower levels of this Phase, however, there was little evidence of structural activity, suggesting perhaps that the occupation was seasonal to begin with but subsequently became sedentary. Another noteworthy feature of these levels was the predominance of bones of small animals and birds. In the upper levels, successive floors were found littered with charred as well as uncharred animal bones along with used stone hammers. A few sherds of pottery were also obtained from the deposits belonging to this Phase, but their size is too small (barely exceeding two centimetres in each case) and the number (thirty-three) too little to be reckoned as a component element of the culture. It is likely that these may have infiltrated from the upper levels through the burrowing activity of rodents. No human burial belonging to this Phase was met with this year.

Phase II was marked by the introduction of metal tools and the regular use of pottery. The microlithic industry continued in a declining order. Excepting a few pots showing symmetrical shape and uniform thickness, resulting perhaps from wheel-throwing, the entire range of pottery was hand-made. The principal ware was a dull brown one of gritty fabric treated with a slip and showing a smoky core. The more common shapes included open bowls with rounded bottoms, large shallow dishes and small broad-mouthed *handis.* The decoration consisted of incised linear and geometric patterns and was restricted to the outer surface of the vessels. Another ceramic, though occurring in lesser frequency, was a red ware showing a uniformly oxidized core, the shapes represented being bowls and dishes. Among other finds, mention may be made of stone hammers, rubbers, saddle querns, sling balls, mace-heads (?) with hour-glass section and beads of carnelian and banded agate and occasionally of bone. As to the structural remains of this Phase several stone-paved floors and circular alignments of stones, indicating circular huts, with a diameter of about 3 m., were found.

Three human burials, all belonging to adults, were met with in this Phase. The orientation of the body was east-west in one case and south-east-north-west in the remaining two. The body in each case was placed supine with the legs and arms in flexed position (pl. XXXA). Besides, funerary objects were also deposited in the graves. The first grave contained eight earthen pots arranged in two groups, one near the head and the other slightly away from the feet, and two copper arrow-heads (pl. XXXB). The second grave contained: four pots kept near the feet and slightly away from the body; one copper arrow-head and one copper spearhead, both kept near the head: one copper awl kept over the abdomen; a necklace of semi-precious stones (carnelian and agate); and a terracotta spindle whorl of plano-convex shape, decorated with punctured triangles. In both these graves, besides the objects mentioned above, animal bones were also found. In the third grave only a single pot was found placed over the skull.

Phase III was distinguished by the introduction of iron and predominance of wheel-made pottery. The microlithic industry declined sharply due obviously to the arrival of iron. Though the dull-brown ware of Phase II continued, the main ceramic industry

of this Phase was a light red micaceous ware with a slipped surface, represented by bowls, carinated dishes and *handis*. Other finds included stone hammers, rubbers, saddle querns and beads of semi-precious stones and glass. Of the structural remains of this Phase, a floor paved with large schist slabs and a large semi-circular structure were noteworthy. The use of kiln-baked bricks for pavements was also attested in this Phase.

Belonging to this Phase was an extended burial, found in Trench E. The grave was covered with small stone-slabs and brick-bats. The dead body lay supine in a fully extended position in the north-south direction. Excepting a square-shaped copper amulet (pl. XXXB, 6), around the neck, no other funerary object was found.

The most consistent material trait of the settlement was the microlithic industry of which the greatest concentration was observed in Phase I. The frequency, however, declined in Phase II and considerably dwindled down in Phase III. The raw material employed for this industry was predominantly quartz, with chert as the second choice. Although quartz is a very inferior material to work with, its large-scale use is probably explained by its easy availability. A noteworthy feature of the industry, however, was the complete absence of the crested guiding-ridge technique, thus indicating its insular nature beyond the influence of the chalcolithic industries of central and western India. Typologically, it is primarily a geometric industry, showing such types as blunted-back blades, obliquely-blunted blades, triangles (mostly scalene), crescents, trapezes and tranchets. The presence of numerous examples of tranchets distinguishes the Bagor microlithic industry from other microlithic industries of India. The tools display a greater variety in shape and size, and are marked by a very symmetrical outline and fine retouch.

Animal bones were obtained in large quantities at the site. In the lowermost levels, the bones were of small size but were in an excellent state of preservation, indicating the emphasis on the hunting of small game and birds. Throughout the upper part of Phase I and the whole of Phase II, large-sized bones were found. Most of the bones were broken or split to extract the marrow; and many of them were even charred, indicating the practice of roasting. In Phase III, however, the number of bones was very small, most of them being fragmentary. No direct evidence of agriculture or, for that matter, even of stock-raising has so far been recorded.

Among the finds, three copper arrow-heads, obtained from one of the graves of Phase II (above, p. 27) deserve special attention. The arrow-heads are of the hollow-based type with two holes near the base. One of the arrow-heads also showed prominent barbs. Similar barbed arrow-heads have also been reported from a number of Harappan sites in Sind, Baluchistan and the Punjab, including Kalibangan in northern Rajasthan. The Harappan examples are, however, without holes. On the basis of a comparative study, a date between 3000 and 2500 B.C. is suggested for Phase I and around 2000 B.C. for Phase II of the settlement.

57. EXCAVATION AT KALIBANGAN, DISTRICT GANGANAGAR.—The Exploration Wing and the Excavations Branch of the Survey, resumed, (*1967-68*, pp. 42-45) the excavation at Kalibangan for the ninth field-season. The work was directed jointly by Sarvashri B. B. Lal, B. K. Thapar and J. P. Joshi, with assistance from Saravashri Arun Kumar, S. Banerjee, N. C. Ghosh, J. P. Srivastava, C. Margabandhu, K. Raghavachari, V. V. Rao, A. K. Sharma and I. K. Sharma. Besides the impartation of field-training to the students of the School of Archaeology, the objectives of this season's work were

four-fold: (i) to further trace the fortification-wall of the 'Lower City' (KLB-2) on the northern, western and southern sides; (ii) to recover the street-planning in the northern half of the 'Lower City'; (iii) to investigate the nature of the occupation at the small (70 × 50 m.) isolated mound (KLB-3), situated about 80 m. east of the 'Lower City'; and (iv) to expose a few more burials in the cemetery area. To realize these objectives, the work was planned as follows: (i) sufficient areas were trenched along the anticipated alignment of the city-wall on the northern, western and southern periphery of the mound; (ii) various small-scale cuttings were made along the anticipated alignment of the streets in the northern half of the mound; (iii) an area of 30 × 20 m. was laid out for horizontal excavation at KLB-3; and (iv) five graves were opened in the cemetery area.

At KLB-2, the fortification-wall (pl. XXXI) was exposed to a length of over 110 m. on the northern periphery. Built in a box-chamber pattern, it had a width varying from 4 to 9·10 m., involving three to four structural phases. On the western side, the fortification-wall was further traced to a length of 22 m. southwards from its already-known point. In the course of exposing the wall in this part of the mound, a heap of baked bricks (pl. XXXIIIA), seemingly representing a brick-robber's dump, was brought to light. On the eastern side, the remains of the fortification-wall could not be traced further. Persistent search, however, revealed a cutting-line, running in alignment with the outer toe of the existing fortification-wall on this side, and available to a length of over 30 m. beyond the extant remains of the fortification-wall. From its behaviour, it may be surmised that this line represents the builder's layout-mark for the fortification-wall. On the southern side, except for washed mud-brick material, no remains of the fortification-wall could be encountered. It is likely, therefore, that the wall on this side may have been completely eroded away. Its probable position, based on the pattern of street-planning within the city, has, however, been shown on the accompanying plan (fig. 1).

In the northern half of the city, four north-south thoroughfares, in continuation of those of the southern half, were found. Of these, reckoning from the west, the first, third and fourth were found to be running almost straight, while the second ran in a curved outline to meet the first at the north-western end, where a gateway (pl. XXXII) was provided. The eastern arm of the gateway, though incompletely preserved, was exposed. Its corresponding western arm as also the north-western angle of the city-wall, which perhaps formed a part of the gateway-complex, could not be recovered. The other two streets did not open into any gateway on this side. On the other hand, it was observed that the houses stopped over 5 m. short of the inner face of the fortification-wall, pointing to the existence, in this part, of an east-west street or alley, connecting the openings of the third and fourth north-south thoroughfares with the gateway located in the north-western corner. The existence of other east-west streets was indicated at a couple of places but their complete outlines could not be traced. During the course of recovering the street-plan, some of the houses flanking the streets were also partially exposed. At a few places, entrances marked by thresholds (pl. XXXIIIB) were also noticed.

An outstanding discovery of the present season's work was that of a pre-Harappan ploughed field (pl. XXXIV), showing a grid of furrow-marks, roughly oriented along the cardinal directions, with the east-west rows running on an average 30 cm. apart and the north-south ones 1·80 m. This pattern bears a remarkable resemblance to that in vogue nowadays around the village, and, on that analogy, may suggest the sowing

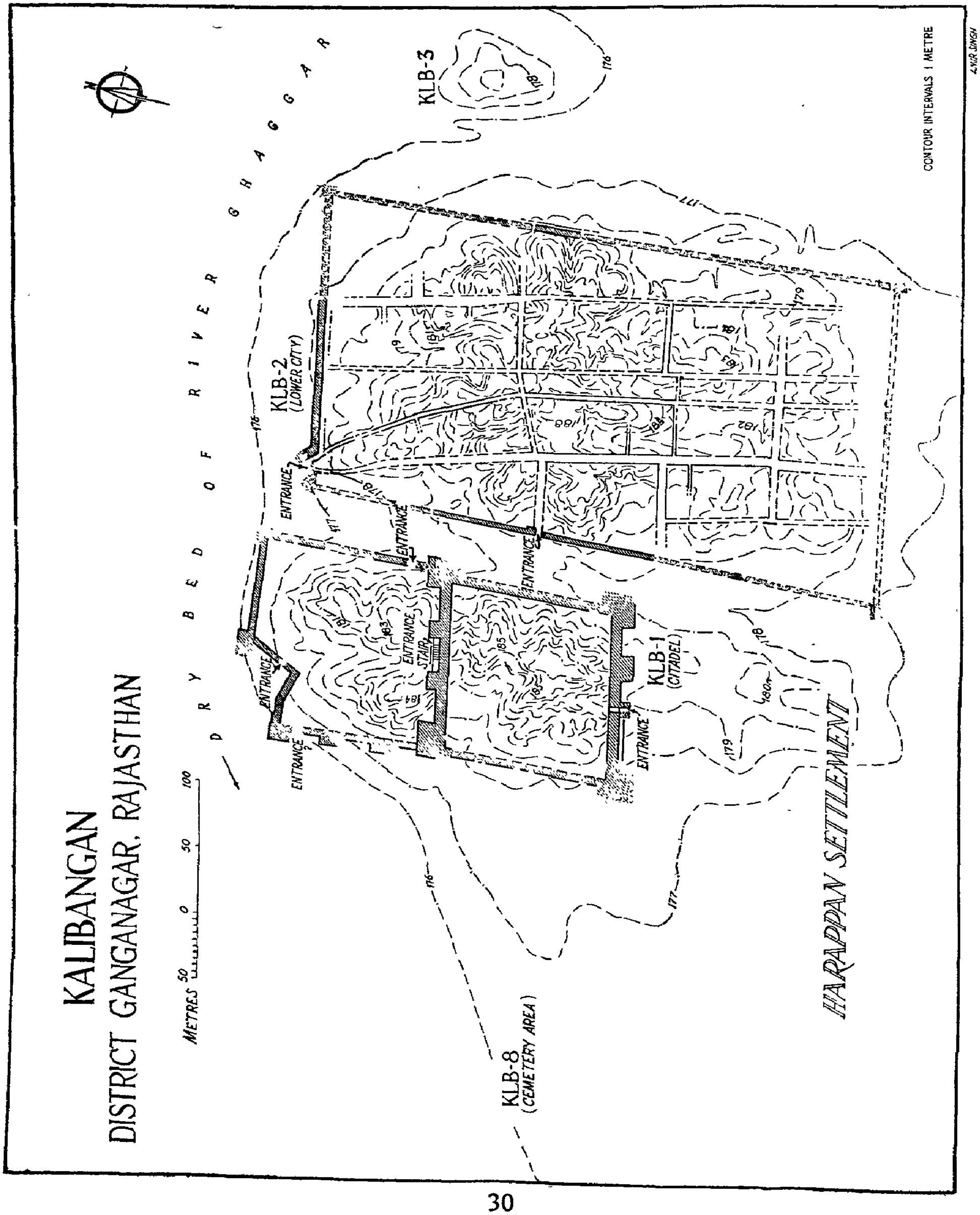
KALIBANGAN
DISTRICT GANGANAGAR, RAJASTHAN
METRES 50 0 50 100
DRY BED OF RIVER GHAGGAR
KLB-3
KLB-2
(LOWER CITY)
KLB-1
(CITADEL)
KLB-8
(CEMETERY AREA)
ENTRANCE
ENTRANCE
ENTRANCE
ENTRANCE
ENTRANCE
ENTRANCE
STAIR
HARAPPAN SETTLEMENT
CONTOUR INTERVALS 1 METRE

FIG. 1

of two varieties of grains, one in each set of furrows. Being covered by the occupation-strata of the Harappan Period, this is perhaps the earliest ploughed agricultural field.

The excavation at KLB-3 brought to light a mud-brick structure (pl. XXXVA), enclosing 'fire altars' with the usual contents—viz., terracotta cakes, ash and the cylindrical blocks. On the eastern side of the structure was a 1·65-m. thick mud-brick wall, of which a length of 12 m. was available. As the site did not show any remains of residential buildings, the existence of a structure with 'fire-altars' may perhaps suggest its use exclusively for religious purposes. Its location outside the city on the east may also probably be of some significance. The pottery obtained from the associated levels revealed that the structure was in use during the Harappan Period.

The finds, including pottery, obtained from this season's work were characteristically Harappan, noteworthy among these being a terracotta feeding cup with a cow's mouth, a copper or bronze knife, bone scrapers and a fragmentary sealing.

In the cemetery area (KLB-8), five Harappan burials were exposed belonging to the already-recorded three types. Of these, two were of the 'pot-burial' type, and one each of the 'extended inhumation' and the 'rectangular pit' (without skeletal material) type. The fifth one, however, presented interesting evidence, for it showed two interments, the earlier one being without skeletal material and the latter with an extended human skeleton. The exact significance of these two interments still remains to be ascertained.

Of the two pot-burials exposed, one (pl. XXXIXA) contained, besides pottery, a fragmentary bone, copper rings and three rows of steatite beads, while the other (pl. XXXIXB) only pottery.

In the case of the burial of the 'extended inhumation' variety, Grave 34 (pl. XXXVI), the grave was rectangular, with the longer axis along the north-south direction and a slight constriction towards the south. The skeleton was founded placed with its head towards the north. The grave-goods consisted of nine pots placed beyond the head in the northern part of the grave.

The grave of the 'rectangular-pit' variety, Grave 33 (pl. XXXVII) measured approximately 4 × 2 m., with the longer axis oriented north-south, similar to that of the extended skeleton variety. On its floor, were found a large number of pots including dishes-on-stand, dishes, goblets, beakers and vases. Other grave-goods comprised three shell bangles. No skeletal material was, however, encountered. The filling of the grave, as in the previously-excavated examples of this variety, showed bands of fine sand and clay overlying the pottery-deposit, suggesting that the pit, after the ritual of depositing the pottery, was left unfilled for some time, resulting in the accumulation of the bands through weather action. After some time, however, the remaining part of the pit seems to have been filled by human agency with cloddy earth.

Grave 32 which represented special features (pl. XXXVIII) was rectangular on plan, measuring approximately 5 × 1·50 m., with the longer axis along the north-south direction. An additional feature of the grave was the provision of steps on the eastern side, perhaps to facilitate access to the grave-floor which was over 1·40 m. in depth from the surface. The excavation revealed two interments in this grave-pit. In the earlier interment, there was no skeleton but only pottery. After the pottery deposition, the pit seems to have been left unfilled as attested by an overlying series of alternating bands of fine sand and clay (pl. XXXVB) extending to a height of about 60 cm. Later, a smaller grave, measuring approximately 2·60 × 1·40 m., was dug into the sand and clay bands, and in the western part of it was placed the dead body with its head towards the north. Two beads, one each of gold and carnelian, forming perhaps part of a necklace,

were found lying on the neck. Facing the front portion of the head, which was turned to the east, were kept five pots. The entire pit was thereafter filled with cloddy earth.

TAMIL NADU

58. EXPLORATION IN DISTRICT DHARMAPURI.—Shri B. Narasimhaiah of the Survey located: (i) megalithic burials with stone-circles at Tandarai; (ii) dolmenoid and port-hole cists at Karuppan-doodi, Torappalli and Uddanapalli; and (iii) hero-stones at Bairamangalam and Tandarai.

59. EXPLORATION IN DISTRICT KANYAKUMARI.—Prof. H. D. Sankalia of the Deccan College Postgraduate and Research Institute, Pune, noticed *teris* at Kanyakumari, Rameswaram and Tiruchendur. At the last-mentioned site he identified three different kinds of *teris*: young, semi-old and old. As a result of his studies he felt that the observations of the late Professor Zeuner relating to the blowing away of red sand resulting in the hard pan being exposed were not correct. The rock-formations from Madras and Bangalore in the north to Kanyakumari in the south have turned mostly reddish and were found to contain considerable amount of weathered quartz which was the chief raw material used by the microlithic people of the *teris*.

60. EXPLORATION IN DISTRICT NORTH ARCOT.—The Department of Ancient History and Archaeology, University of Madras, led by Professor T. V. Mahalingam, explored the ancient site of Takkolam in Taluk Arakonam and discovered Early Stone Age tools (pebble- and flake-tools) in an extensive area on the northern bank of the river Kallar, near the Jalanathesvara temple.

61. EXCAVATION AT KORKAI, DISTRICT TIRUNELVELI.—With a view to ascertaining the cultural sequence of the region, the Department of Archaeology, Government of Tamil Nadu, under Shri R. Nagaswamy, assisted by Shri N. Kashinathan, conducted excavation at Korkai, the ancient prot of the Pandyas, situated at the mouth of the Tambraparani. The site is referred to in early Tamil Sangam literature and in the notices of the classical geographers as an important port for pearl-fishery.

The site was first excavated in 1827 by Dr. Caldwell who found a few urns, one of which was reported to have been of giant size. During the present season, five cuttings were laid out: four in the present village of Korkai and one in the midst of a tank at the southern end of the village.

The excavation revealed a continuous occupation of the site, from the Megalithic period to the present times. Besides the megalithic Black-and-red Ware, sherds of black-slipped, plain red, and red-slipped wares and of the Rouletted Ware of local origin were also obtained from the lower levels.

At KRK-1, a broken megalithic urn was found at a depth of 2·22 m. Besides, a coin of the Chola king Rajaraja was also recovered from the upper levels.

At KRK-2, urns of the megalithic assemblage, containing a few pieces of post-excarnation bones were found.

At KRK-3, which was located in the midst of a lake at the southern end of the village, the foundations of a medieval structure were met with.

At KRK-4, laid out in the centre of the village, a brick platform, provided with a flight of steps (pl. XLA) at one end, was exposed. The platform consisted of nine courses of large bricks (size: 45 × 28 × 7½ cm.). Immediately beneath the platform, three terracotta rings, placed one above the other in the fashion of soakage jars were found. These rings seem to have been placed in position after digging a foundation trench, which was later filled in with conch shells, potsherds and grit, etc., by way of reinforcement. Besides, the cutting yielded a number of inscribed potsherds (pl. XLIA) bearing Brahmi letters that could be assigned to the first century A.D.

At KRK-5, two sets of soakage jars were brought to light. Inscribed potsherds and pearl-oysters were the other important finds of the area.

That Korkai was important for pearl-fishery is confirmed by the find of innumerable pearl-oysters in the various levels of the site. Among the finds, mention may be made of sherds bearing graffiti marks (pl. XLIB) and various objects (pl. XLB) of copper and iron, perforated terracotta tiles, beads of crystal, terracotta, etc., a terracotta figurine (torso), bone earlobes and arrow-heads and circular and triangular discs, made of terracotta or broken potsherds.

UTTAR PRADESH

62. EXPLORATION IN DISTRICTS ALLAHABAD, AZAMGARH, BANDA, MIRZAPUR, PRATAPGARH AND SULTANPUR.—In continuation of its earlier work, the Department of Ancient Indian History, Culture and Archaeology of the University of Allahabad, under Prof. G. R. Sharma, assisted by Dr. R. K. Varma, Sarvashri V. D. Misra, B. B. Misra, D. Mandal and R. S. Rana, undertook a systematic exploration in the valleys of the rivers Belan, Gurma, Seoti and Tundiani in the Meja Sub-division of District Allahabad. Besides, the geological formation on the right bank of the Yamuna near Mau in District Banda and the valleys of the following nullahs were also explored: Amilia Kachchha, Baburahia, Badbada, Bhorsaiya, Bharu Riva, Baithakawa, Chundrighat, Deraghat, Jadipur, Khajuri, Lohanda, Majhiari, Makari Khoh, Nahoha and Ramgarh. As a result of the exploration, many sites of the following categories were located: (i) Early Stone Age; (ii) Middle Stone Age; (iii) Upper Palaeolithic; (iv) Late Stone Age; and (v) Chalcolithic and early historical.

The geological formations on the banks of the Belan, Seoti and their affluent nullahs showed at places unconformity between the first silt and the cemented gravel. The river-section of the Belan near Barondha in District Mirzapur revealed the existence of boulders with rolled edges. It is likely, therefore, that while the boulders in other localities were cemented *in situ,* in the locality of Barondha, these were perhaps brought down by the river from upstream. Furthermore, the intervening silt, sandwiched by Cemented Gravels I and II, was found to be marked by the presence of small stone chips. Cemented Gravel III in this area yielded a good number of molluscan shells.

On the river Son, 80 km. from Hanumana, on the Hanumana-Baharia road near the Jogadaha bridge, Dr. R. K. Varma and Shri B. B. Misra, noticed a river-section with the following sequence (from the basal bed-rock upwards): (i) cemented gravel in eroded condition, which yielded a pebble tool; (ii) clayey deposit, yielding tools of the Middle Stone Age; (iii) uncemented gravel, yielding tools of the Upper Palaeolithic blade industry; and (iv) clay deposit, yielding Late Stone Age tools. Among the other geological observations made in the area, mention may be made of the existence of folding in the Vindhyas, as noticed near the Jogadaha bridge.

The section on the right bank of the Yamuna near Mau showed the following sequence (from the basal bed-rock upwards): (i) detrital formation (2·12 m.), yielding a few Early Stone Age artifacts, comprising one round scraper and two doubtful pieces, one each of a handaxe and a cleaver; (ii) yellowish clay (6·10 m.); (iii) whitish or light yellowish clay (1·62 m.); (iv) reddish dark-brown clay (1·22 m.); (v) light brownish clay (1·82 m.); (vi) white clay (1·82 m.); and (vii) dark brown clay (1·52 m.), forming the present suface. The deposits from (ii) to (vii) did not yield any tool.

A large number of Early Stone Age tools, including pebble-tools, handaxes, cleavers and scrapers of various categories and sizes were picked up from several localities along the explored rivers and nullahs. Generally, these were collected from river-beds but wherever they were found *in situ,* the horizon of their occurrence was found to be Gravel I. Among the explored sites. Kosakangarha (on the northern slope of Chatar-palia-ki-Pahari) and Barokhora (on the western slope of Barokhar hillock) in the Tundiari valley are noteworthy inasmuch as the tools recovered from these two sites were found to be fresh, without any traces of rolling or wear and tear. In the light of these observations, the possibility of these being factory-sites may not be ruled out. Excepting a single handaxe, which has been made out of chert, all the tools were manufactured from quartzite of different shades.

Tools of the Middle Stone Age, consisting of scrapers of various types, blades and points, were collected from almost all the localities of the Belan, the Seoti and its affluent nullahs as also from a few sites on either side of the Jogadaha bridge on the river Son. The following sites, however, were more noteworthy: Bataubir, Locality I and II, on the Nadoha nullah; Nagini-ki-Pahari, on the northern slope of the Deoghat hillock; Atreii, on the south-eastern slope of the Ramgarh-ki-Pahari; Dhavarihawa near village Mahuli in the Tundiari valley; and Lokhari in Banda. Of these, the site at Bataubir yielded large-sized cores and tools which appeared very fresh. In a majority of the cases, the tools were obtained from the beds of the rivers and the nullahs, a good number being also extracted from Cemented Gravel II; no tool of this category was found in Cemented Gravel I.

The exploration in the valleys of the Belan and the Seoti led to the discovery of over three hundred fossil-bones, of which as many as fifty-seven were found from Gravel I, near Daiya on the left bank of the Belan. The species represented in the collection were *Bos, Equus, Elephas, Bubalus, Cervus, Gharialis, Chelonia, Tragulid, Unio,* etc. These fossils were studied by Shri M. V. A. Sastry. Palaeontologist-in-charge of the Geological Survey of India, whose observations are as follows: 'The fossils of the lower conglomerate (Cemented Graval I) of the Belan and Seoti system can be equated with those at the lower zone of the Narmada (Mid-Pleistocene) on faunistic and lithological considerations. The fauna from Cemented Gravel II and from other younger beds is similar, and more or less related to living members of the same groups, and indicate a younger age than the Narmada alluvium.'

From Amilia Kachchha-ka-nullah and Khajuri nullah of the Belan, Lohanda nullah of the Seoti, Dhavarihawa near the Ramgarh hillock in the Tundiari valley as also from some sites located on the Son and near Khajuri Dam in District Mirzapur, quite a large number of broad blades, manufactured on cherty material, was obtained. The size and retouching of these tools distinguish them from those of the Middle Stone Age on the one hand and of the Late Stone Age on the other. The complete absence of quartzite as raw material in this assemblage is noteworthy.

Microliths, consisting of cores, flakes, blades, both parallel-sided and blunted-back, scrapers and points, were obtained from villages Peari and Mahuli in the Tundiari valley and from sites near Jogadaha bridge on the Son. A careful study of the microlithic industry from the above-mentioned areas shows that (i) the tools were fashioned invariably on cherty material, (ii) the geometric shapes, viz. triangles and trapezes, were conspicuous by their absence, (*iii*) the retouching on the edges of the tools was very bold and (iv) some of the flakes seem to have been re-utilized after a considerable gap of time as evidenced by patinated surface and freshly-retouched working edges. No pottery, however, was found in association with these microliths.

Shri J. S. Negi, accompained by Sarvashri V. D. Misra, M. C. Dixit, M. N. Rai and S. N. Prasad, explored the mound locally known as Nahusa-ka-Tila in the vicinity of the Sub-divisional headquarters of Ghosi in District Azamgarh, and found that the site was anciently fortified with a mud wall. Remains of gateways were also located on the northern, western and southern sides. The ceramics represented at the site included: (*i*) black-and-red ware, both plain as well as painted; (*ii*) the N.B.P. Ware, including the painted variety; (iii) black-slipped ware; (iv) plain grey ware; and (v) plain red ware. Among other finds obtained from the site, mention may be made of terracotta figurines, both of human and animal variety, and a chert flake. As no antiquities later than those of the Kushan period were obtained, the desertion of the site could be placed around second-third century A.D.

Shri V. D. Misra explored the ancient mound at Patharaha, located on the river Koi, 22 km. east of Mirzapur, and found sherds of black-and-red, black-slipped and plain red wares. In this assemblage, the N.B.P. Ware seems to be absent. Significantly enough, some of the types represented were found to be similar to those from Kakoria in District Varanasi, while others showed resemblances to the forms normally associated with the N.B.P. Ware. The site in question, therefore, seems to represent a transitional stage between the chalcolithic cultures of the Vindhyas on the one hand and that associated with the N.B.P. Ware of the Ganga plains on the other.

Shri Ramnihora Pandey, a research scholar in the same Department, explored an ancient site at Chauharjan, situated on the right bank of the Sai, 13 km., south-west of Pratapgarh, and found sherds of the N.B.P. and the associated wares.

Shri V. D. Misra and Drs. R. K. Varma and K. C. Ojha, of the same Department, explored the ancient mound at Nevari on the Khoilan Lake, 32 km. south of Pratapgarh, and found that the site was under occupation from the late phase of the N.B.P. Ware to early medieval times.

Dr. Om Prakash of the same Department explored the mound known as Bhar-ka-Bhita, on the left bank of the Gomati, near village Ghajanpur in Tahsil Musafirkhana, District Sultanpur, and found sherds of black-and-red, N.B.P. and plain grey wares.

63. EXCAVATION AT LAL QILA, DISTRICT BULANDSHAHR.—The Department of History, Aligarh Muslim University, undertook an intensive exploration at Lal Oila, situated adjacent to village Narainpur, 24 km. from Aunpshahr along the Aligarh-Anupshahr road. The work was directed by Shri R. C. Gaur under the general supervision of Professor S. Nurul Hasan.

Earlier exploration had already yielded sherds of the Ochre Colour Ware from the site. During the course of the present operation, a few cuttings were also made.

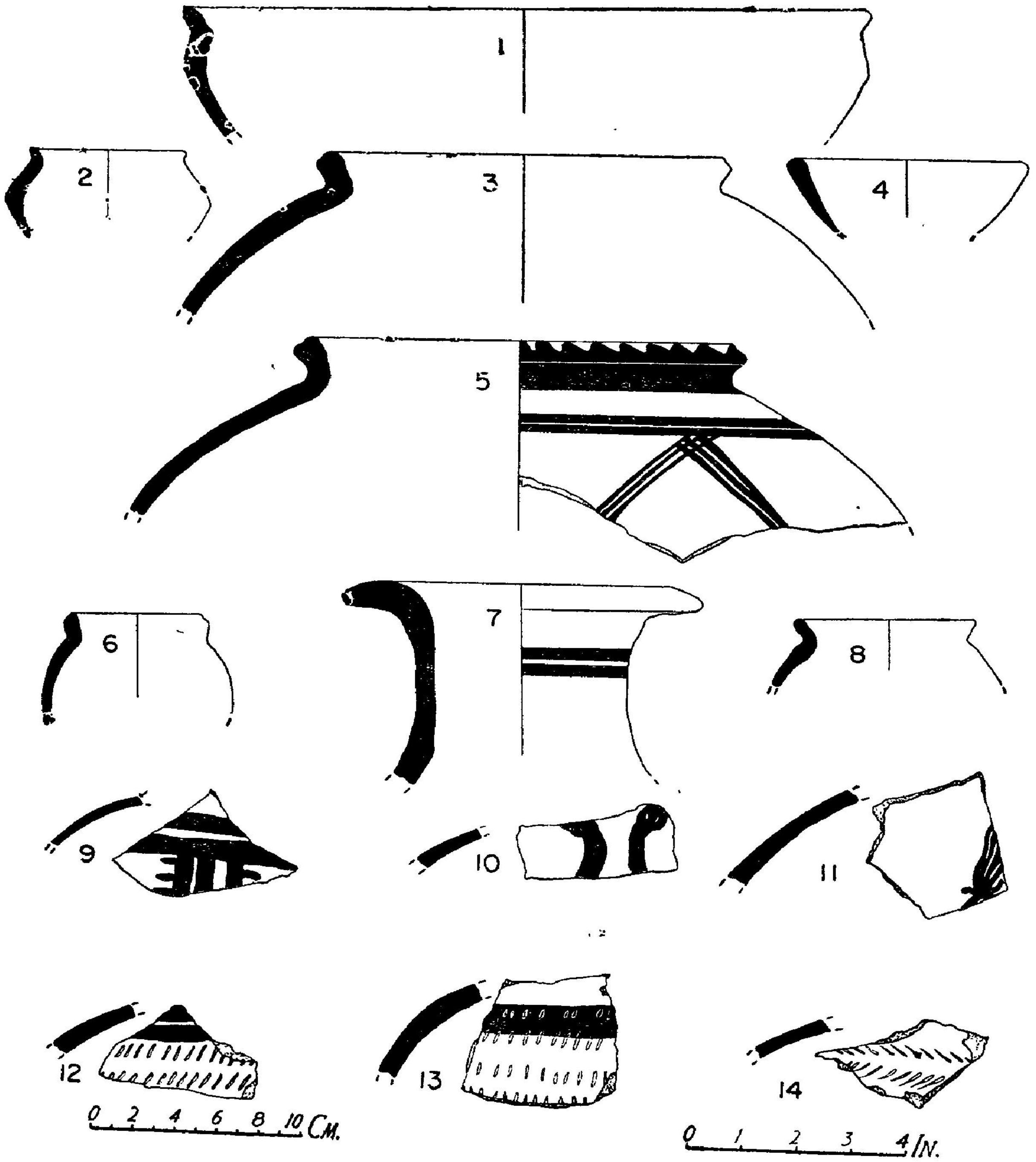

FIG. 2

The excavation revealed that Lal Qila was a single culture site of the Ochre Colour Ware, with the occupation-deposit varying from 25 cm. to 1·90 m. in thickness. Although the nature of the deposit at this site was found to be almost similar to that of Atranjikhera, three distinct layers (pl. XLII) could be identified. Nevertheless, as at other sites, the sherds were found embedded in compact yellowish soil mixed with tiny pieces of gravel. In one of the cuttings were found a burnt-mud floor, charred bones of animals, ash with charcoal pieces and fine pieces of pottery. It is reasonable to infer that the floor belonged to a kitchen, though the possibility of its being a ritualistic spot cannot altogether be ruled out. From the other levels, besides pottery, a large number of bone-fragments, including horns was obtained.

The pottery was found to be similar to that obtained from other sites yielding the Ochre Colour Ware. Among the common types (fig. 2), mention may be made of ring-based vases with out-turned flat or beaded rim, lids, basins, bowls, miniature vases and high-necked jars. A large number of painted sherds showing designs in black over a red-slipped surface, was also found. The design-repertoire consisted of rim-bands, parallel lines, strokes and dashes, loops, meanders, etc. Sherds showing incised decoration were limited in number. Equally noteworthy were the other finds which included pestles, terracotta bangles, beads, discs made out of potsherds, and a broken crucible.

64. EXCAVATION AT ATRANJIKHERA, DISTRICT ETAH.—In continuation of the previous work (*1967-68*, pp. 45-46), the Department of History, Aligarh Muslim University, resumed the excavation at Atranjikhera. The work was directed by Shri R. C. Gaur, under the general supervision of Prof. S. Nurul Hasan. This year's work had two objectives to realize: (i) to determine the exact relationship between the deposits of the Painted Grey and the N.B.P. Wares; and (ii) to ascertain the extent of occupation of the former at the site. Earlier observations had indicated that the P. G. Ware deposits were confined only to the eastern side of the site, the rest of the mound showing generally deposits of the N.B.P. Ware and the succeeding cultures. With a view to confirming this observation, two cuttings, called B and C, were made.

This season's work confirmed that during the pre-N.B.P. Ware period, the habitation was confined only to the eastern part of the mound. A flood seems to have washed away a considerable part of the Painted Grey Ware habitation during its last phase. The post-flood habitation was represented by a pre-structural deposit of the N.B.P. Ware phase, in which the entire cultural pattern of the preceding period, including its pottery was continued, suggesting a gradual evolution of the succeeding culture, without any break. This pre-structural N.B.P. Ware phase also seems to have been brought to an end by a flood, causing a heavy loss. After this havoc, the river appears to have shifted towards the east, leaving the entire western area available for occupation. The erosion line in respect of this flood was recorded in Cutting C.

The post-flood phase was represented by the N.B.P. Ware complex, showing full urbanisation of the site. During this Period, the town was perhaps fortified, as evidenced by a mud-brick bastion partly exposed in the south-western corner of Cutting C. Attached to it were three successive pavements. The bastion seems to have been frequently reinforced in later periods. Stratigraphically, this structure seems to have been built during the middle phase. The whole deposit against the bastion showed intense structural activity, including house-complexes, brick-floors, ring-wells, granary, etc.

As regards pottery, it was observed that in the earlier levels of this Period such shapes as carinated *handis*, pear-shaped vases, etc., which otherwise are normally asso-

ciated with the N.B.P. Ware, were conspicuous by their absence. Bowls with incurved rim, however, occurred right from the beginning of this Period. The excavation also yielded a large number of antiquities, including objects of iron, copper, bone, stone and terracotta. Of these, a pair of copper-frogs (pl. XLIII A) and terracotta figurines of horse and bull (pl. XLIII B) belonging to the N.B.P. Ware Period are quite interesting.

65. EXCAVATION AT BHITARI, DISTRICT GHAZIPUR.—The Department of Ancient Indian History, Culture and Archaeology of the Banaras Hindu University undertook excavation at the historically famous site of Bhitari. The work was conducted under the direction of Dr. K. K. Sinha. The main objective of the excavation was to determine the hitherto unknown archaeological context of the inscribed sandstone column, erected by Skandagupta (A.D. 455-67), and also of the many sculptured fragments reported from the site in the past.

The undulating ground adjoining the sandstone column was taken up for area-excavation. It may be recalled that the inscribed text mentions the installation of an image of Vishnu, which makes it more than probable that there once stood a temple in the vicinity. After the clearance of a mass of brick-débris, the undamaged portion of an extensive wall (pl. XLIV A), 1·12 m. in width and running roughly north-south, was noticed. It was traced up to a length of 19·9 m. A significant aspect of its orientation was that it followed the same alignment as that of the square base of the sandstone pillar. While the exact relationship of this brick structure and the pillar still remains to be ascertained, the common alignment may lend weight to the assumption that the Gupta pillar stands in its original position. The structure showed clearly two stages of construction (pl. XLIV B). The structure rested on a floor paved with dressed sandstone blocks. This floor was found to run all around the available length of the structure. Although constructionally the paved floor appears to be earlier than the brick wall, it is not unlikely that the former continued to be in use contemporaneously with the latter. Much work yet remains to be done before the exact nature of the massive structure can be determined. The use of decorated bricks and the sunken faces of the elevation, in an arrangement similar to that of the brick temple at Bhitargaon in District Kanpur, would indicate that this large-sized structure may represent the remains of what may once have been a temple-complex. An interesting feature of the structure was the coursed-packing of the enclosed area. Two alternative explanations are possible. Either (i) the structures exposed represent the ruins of a solid and lofty plinth, the superstructure of which has completely disappeared, or (ii) after the temple fell into disuse, the enclosure was filled in to save it from further deterioration.

Two finds from the collapsed débris of the building highlighted the significance of the construction, viz., (i) inscribed brick-fragments, mentioning the legend *Sri Kumara-gupta,* and (ii) a remarkably well-preserved panel of sandstone, showing a scene (pl. XLV) in which Yasoda is seen receiving the child Krishna from Vasudeva. Both in style and in theme, it vividly brings to mind a similar panel of the Gupta temple at Deogarh in District Jhansi. The depiction of the Krishna-Yasoda legend on the panel would indicate that the supposed temple-complex was devoted to Vishnu. This is an additional factor in linking the temple-complex with the adjoining column erected by Skandagupta who, according to the inscribed text, is said to have installed an image of Vishnu.

An interesting feature of the work in the area was the revelation that the build-

ing-complex described above was not the earliest. Quite elaborate structural activity appears to have preceded the temple. The stone-paved floor may serve as a good dividing line separating the earlier group from the later complex.

The other site where detailed investigations were carried out was located about 300 m. north of Skandagupta's pillar, along the Gangi river. Here, an area, measuring approximately 30 × 30 m., was divided into grids of 6 m. each. Within a few centimetres of the top soil, the square ground-plan of a chamber (pl. XLVI) was exposed to view. On the outside, the corners were found to be the doubly recessed, resulting in neat projections in the three sides of the wall. The *triratha* plan of the temple was similar to that of the temple at Bhitargaon. Not much of the superstructure has survived to give us an indication of the elevation. However, the unusually wide walls (1·78 m.) of the square cells may indicate the existence of either a second storey or a *sikhara* for the temple. At a subsequent stage, the simple ground-plan was made more elaborate by the addition of a square pavilion (size: 6·57-m. sq.), of which six masonry pillar-bases were exposed. The walls of the pavilion have almost completely disappeared on the western and most of the northern side. The *kankar*-nodule foundation, recovered intact, however, indicated the plan of the building. The finds, including pottery, terracotta figurines (pl. XLVII), shell bangles, etc., obtained from the site, belong to the Gupta period.

66. EXPLORATION IN DISTRICT KANPUR.—Shri L. M. Wahal of the Northern Circle of the Survey reported the find of the N.B.P. Ware at Chandanpur and Reona. He noticed a colossal image of the Kushan period, measuring 1·87 × 1 m., at Samutti on the left bank of the river Yamuna and also Brahmanical sculptures of the medieval period, viz. Ganesa, Ambika and Vishnu, at Digh and Chaparghate, near the confluence of the rivers Yamuna and Sengar.

67. EXPLORATION IN DISTRICTS KANPUR AND SITAPUR.—The Department of Archaeology, Government of Uttar Pradesh, undertook an exploration of Kanpur and Sitapur Districts as a part of its project of village-to-village survey. The work was conducted by Shri K. C. Ojha, assisted by Sarvashri Hem Raj and S. P. Shukla.

As a result of these investigations, medieval sculptures of Siva-Parvati, Vishnu, Ganesa, Kartikeya, etc., were noticed at Akbarpur-Birbal, Nihura and Venda in District Kanpur. Besides, ancient mounds were located at Karchalipur yielding the black-and-red, N.B.P. and black-polished wares and at Jahangirabad, yielding the black-and-red ware.

A trial trench was also undertaken at Jajmau in the same District. As the excavation was not carried down to the natural soil, the earliest levels of the site still remain unknown. However, the strata yielding the N.B.P. Ware were reached.

The exploration in District Sitapur resulted in the discovery of several sites, yielding the N.B.P. Ware, grey ware, terracotta figurines, including those of Gupta period, medieval sculptures and glazed ware. During this survey, temples belonging to the eleventh and twelfth centuries A.D. were discovered at Manwan and Rasulpanah, in Tahsil Sidhauli, and at Nasirabad in Tahsil Misrikh. Broken images of Vishnu, Siva, Durga and Ganesa and carved bricks were found at these sites.

With a view to ascertaining the cultural sequence, a trial trench, measuring 5 × 5 m., was also laid out at Manwan-dih in Tahsil Sidhauli. The excavation was carried down to a depth of 6 m., without reaching the natural soil. Within this depth,

eight structural phases, all belonging to the early historical period, were identified. Among noteworthy finds, mention may be made of pottery-forms such as sprinklers, inkpot-type lids, and five copper coins. Mica-dusted pottery was met with in all the layers, but its frequency decreased in the lower levels.

68. EXPLORATION IN DISTRICT LUCKNOW.—During the course of the exploration in the District, Dr. S. B. Singh of the Northern Circle of the Survey found the N.B.P. Ware at Ahmadpur Khaira, Umed Khera and Utrawan in Tahsil Mohanlalganj. In the same Tahsil he also noticed: (i) medieval sculptures, representing *mithuna* figures, horse-rider, etc., at Khujauli; (ii) an image of Mahavira and a Buddha head at Mohari Kalan; and (iii) a figure of Marichi at Nagram.

69. EXCAVATION AT SONKH, DISTRICT MATHURA.—In continuation of the work started in 1966-67, the team of the Berlin Museum of Indian Art, under Prof. H. Haertel, resumed excavation at Sonkh. During 1967-68, an area of 50 sq. m. was excavated through five strata from the top-surface of the citadel. The structures met within these strata, however, related to the Jat period, when the ancient mound was reoccupied for a few centuries.

This season's excavation revealed, below the Jat fortress, structural (pl. XLVIII A) remains of several occupations, ranging in date from the fifteenth to the ninth century A.D. The lowest level of this medieval phase was characterised by: (i) fragments of grey stone plaques with figures of Hindu deities; and (ii) red-brown bowls decorated with lotus (pl. XLIX D), *sankha* and other designs, comparable to those of Ahichchhatra Stratum II. Immediately below the deposits of the early medieval period, the remains of a late Kushan period structure (pl. XLVIII B) were exposed in two squares.

A small cutting laid out on the southern slope of the citadel was carried down to the Painted Grey Ware levels, through Kushan, Sunga and Mauryan deposits. The finds obtained from the different levels of this cutting included terracotta figurines (pl. XLIX A and XLIX B), inscribed seals (pl. XLIX C), punch-marked silver coins, an uninscribed cast coin and pottery.

70. EXPLORATION IN DISTRICT MEERUT.—In continuation of his work in the District (*1967-68*, p. 48), Shri R. P. Sharma of the North-western Circle of the Survey discovered: (i) the Ochre Colour Ware at Malehra and Nahli in Tahsil Sardhana; (ii) the Painted Grey Ware at Kuri, Khindwari, Mopalpur, Nethla, Sultanpur Hitana and Tanda in Tahsil Baghpat and Dhanawali in Tahsil Sardhana; and (iii) grey ware and early historical pottery at Jalalpur and Rali in Tahsil Meerut. At Malehra terracotta cakes were also found.

71. EXPLORATION IN DISTRICT NAINI TAL.—While exploring the District, Shri L. M. Wahal of the Northern Circle of the Survey noticed the remains of a brick-temple at Joytial Khatte near Haldwani, assignable to medieval period.

72. EXPLORATION IN DISTRICT PRATAPGARH.—During the course of an exploration in the District, the Department of Archaeology, Government of Uttar Pradesh, located a low mound at Sarai Nahar Rai, which, on closer examination, was found to yield microliths of both the geometric and non-geometric varieties. Besides, quite a number

of skeletons, lying in extended position, were also noticed in association with the microliths. The pottery found on the site seems to be both handmade and wheel-thrown, but without any specific resemblance to any known industry.

73. EXPLORATION IN DISTRICT SAHARANPUR.—In continuation of his previous work, Shri Shankar Nath of the North-western Circle of the Survey discovered: (i) the Ochre Colour Ware at Mirpur and (ii) the Painted Grey Ware at Halwana Ahatmal, both in Tahsil Saharanpur.

Shri Shankar Nath re-examined certain sites, already explored by the Headquarters Office of the Survey, and confirmed the presence of the Ochre Colour Ware at Faridpur-urf-Mandowala and of the Painted Grey Ware at Khirka Zunnardar and in the lowest deposits of Budhakhera Pundir Mustahkam.

74. EXCAVATION AT RAJGHAT, DISTRICT VARANASI.—The Department of Ancient Indian History, Culture and Archaeology of the Banaras Hindu University, under Professor A. K. Narain, assisted by Sarvashri T .N. Roy and Bhupendra Pal Singh, resumed (*1964-65*, pp. 44-45) excavation at Rajghat. The objective of this year's excavation was essentially to impart field-training to the postgraduate students of the Department. Only a small area was, therefore, taken up for excavation. Unfortunately, however, the exposed strata were found to be badly disturbed with the result that no proper sequence could be established. Noteworthy finds obtained from the excavation included human and animal figurines, an animal-shaped pendant and a disc with stamped rossette design, all of terracotta.

WEST BENGAL

75. EXPLORATION IN DISTRICTS BANKURA, BURDWAN, MIDNAPORE, PURULIA AND 24-PARGANAS.—The Department of Archaeology, Government of West Bengal, undertook exploration in the above Districts. The work was conducted by Shri P. C. Dasgupta, assisted by Shri D. K. Chakravarty and Dr. S. C. Mukherji.

Exploration along the meandering course of the Kangsavati, in District Bankura, resulted in the find of more than one hundred Early Stone Age tools at Kankradara, showing early and developed Acheulian handaxes, ovoids, cleavers and pebble-tools. These tools were often found embedded within a matrix of secondary laterite underlain by an igneous formation or dyke. Two terraces, separated by a height of about 4 m., were noticed at Kankradara. While the lower one contains a loosely-cemented conglomerate of gravels, mainly quartz and quartzite, the upper one was found to be characterized by the secondary laterite-bearing gravels and siliceous concretions.

In District Burdwan, ancient mounds, yielding black-and-red, black-burnished and red wares, were located at Hatipotar Danga near Raigram and at Mandalgram. Besides, pottery of the early historical period was found at Kalyanpur, close to the ancient bed of the river Maya.

In District Midnapore, the area stretching from the region of Tapovan and Chandabila in the east to the rugged uplands of Ghorapincha, Begunadiha and Hatibari in the west was explored. The tools of Early Stone Age recovered from the various localities, including cliff-sections, terraces and valleys, not only include examples of the chopper-chopping family, viz., almond picks, side-choppers, and end-choppers, but also varieties of handaxes, cleavers, discoid scrapers and rostrocarinates.

Chalcolithic black-and-red and lustrous red wares were found at Sijua on the Kangsavati in the same District.

Explorations in the uplands flanked by the Suvarnarekha in District Purulia brought to light sites yielding (i) diminutive handaxes and hollow-scrapers of the Middle Stone Age, (ii) backed and parallel-sided blades, fluted cores, etc., of the Late Stone Age and (iii) shouldered celts, adzes, and triangular celts of the Neolithic Age. Besides, fossilized bones were also recovered from the argillaceous and *kankar* deposits at various sites on both sides of the Suvarnarekha.

With a view to ascertaining the stratigraphy of the Suvarnarekha valley, a wedge-shaped cutting was made on a cliff at Ghorapincha close to the gorge at Hatimara. The following sequence was revealed (from bottom upwards): (i) kaolinized deposit containing small gravels of quartz, quartzite, non-implementiferous; (ii) secondary laterite containing Early Stone Age tools; (iii) reddish and yellowish silts of lateritic origin with streaks of concretionary pellets and nodules, depicting climatic fluctuations, non-implementiferous; and (iv) yellowish loamy earth with a pocket of sand, being the uppermost layer. The above stratification was also corroborated by exposed cliff-sections of the various nullahs in the region. Apart from typological considerations, the occurrence of the highly rolled and patinated tools along with unrolled and fresh-looking ones seems to indicate two important phases of the Early Stone Age industry in this area.

In District 24-Parganas, Sunga-Kushan pottery was found at Bhangankhali on the river Matla.

76. Exploration in Districts Bankura, Birbhum and Midnapore.—In continuation of the previous work in the area (*1967-68*, p. 62), Dr. Asok K. Ghosh of the Prehistory Laboratory, Department of Anthropology, University of Calcutta, undertook further explorations in these Districts.

During a short reconnaissance in District Bankura, he collected a few microliths from Jhilimili. The artifacts (scrapers, blades, flakes and cores) were found to occur on an erosional slopy surface, very near the school campus. No outcrops of the colloidal silica, on which the artifacts were made, were found in the vicinity.

In District Birbhum, he and Shri R. Ghosh of the same Department, discovered two Late Stone Age sites, at Kondaipur and Purandarpur. Both these are located on the right side of Bolpur-Seuri road, about 1 to 1·6 km. from Purandarpur market. The generalized stratigraphic sequence, as revealed from the nullah section, showed that the uppermost clay-bed was usually dull brown in colour and varied in thickness from ·3 to 1·06 m. At places, a thin mantle of surface-soil was also available. Below the above-mentioned clay-bed was a bed of pisolitic laterite, exposed up to a depth of about 1·50 m. No clear line of demarcation between the upper levels of the pisolitic laterite and the overyling clay-bed was observed. At lower reaches, a part of greyish sticky clay-bed, perhaps a decomposed variety of the bed-rock is found to be exposed. A large number of microliths was collected from the two sites, the types represented being scrapers, knives, awls, points, lunates, flakes, blades and cores. Different varieties of colloidal silica formed the raw material of the tools. Field observations indicate that the artifacts possibly belonged to the upper layer of the pisolitic laterite, mixed with clay.

In District Midnapore, Dr. Ghosh found handaxes and large scrapers at Muransole and Chakadoba. Some of the tools were found *in situ* in the detrital laterite while others were exposed through erosion of the detrital laterite.

77. EXCAVATION AT RAJBADIDANGA, DISTRICT MURSHIDABAD.—In continuation of the previous season's work (*1967-68,* pp. 62-63), Dr. S. R. Das, assisted by the staff and students of the Department of Archaeology of the University of Calcutta, resumed excavation at Rajbadidanga.

It may be recalled that during the last season's operations, the eastern boundary-wall of the *panchayatana* temple-complex was fully exposed along with other walls, platforms, *surkhi*-rammed floors, etc. The objectives of this season's work, which was confined only to the western part of the mound, were: (i) to trace the continuation of the long walls, partly exposed during 1964-65; and (ii) to obtain the complete plan of this building-complex. Altogether seven trenches were laid out, of which five were excavated up to the brick platform and the remaining two up to the natural soil.

The excavation revealed three cultural Periods: Period I, represented by crude and plain pottery; Period II, distinguished by the presence of inscribed seals and fine polished sherds; and Period III, characterized by the absence of inscribed seals and pottery of the previous Period. Within the deposits of these three cultural Periods, six structural phases (pl. LI A) were recognized: Phases 1 and 2 related to Period I; Phases 3 and 4 to Period II; and Phases 5 and 6 to Period III.

A large number of walls, *surkhi*-rammed floors and platforms (pl. L) belonging to various Phases were exposed. In Phase 2, a gap which might represent an entrance to the building-complex was observed between two walls. At another place, post-holes in the *surkhi*-rammed floor and stone-blocks were noticed at regular intervals.

Several complete and fragmentary inscribed terracotta seals and sealings (pl. LI B) of various shapes and sizes were obtained from the excavation, of which twenty-five could be wholly or partly read, the others being illegible. The readings were done by Dr. B. N. Mukherjee. The majority of the sealings bear personal names, such as *Jivendra-varmanah, Sri Manjuguptah, Pujava* (?), *Vani*(?)*kasya, Kavagunaka, Naraguna, Sri Padyasya, Tarapa-Kadasa, Rava, Nrisa, Kavase* (?) *vah,* etc. One seal shows an interesting legend: *Sri Vanika Varendrasya.* Two sealings are further important. Of these, one bearing seventh-eighth century Pallava script reads: *Hi* (or *Ha*) *nnohidita* (or *no*) *Hannohidi* may be *Svarnasri,* and the other bears Roman letters *OABORRA,* perhaps a personal name. Palaeographically, the latter seal cannot be placed earlier than the second century A.D. It may be recalled that another Roman seal bearing the name of *Horae* was discovered at this site in 1962. Other finds included: a number of terracotta objects, e.g., discs, balls, beads, votive *stupas,* flesh-rubbers, animal and human figurines; objects of stone and copper; and pottery, both plain and decorated. Some miniature pots, perhaps used in rituals, were also found.

As regards the chronology of the site, convincing evidence has been furnished by the inscribed seals which palaeographically are attributable to a period ranging from *circa* fifth-sixth century to ninth-tenth century A.D. These seals were mostly recovered from Phases 3 and 4 of Period II. The occupation at the site, however, began around second-third century A.D. and perhaps continued up to twelfth-thirteenth century.

The building pattern disclosed characteristic features of a Buddhist monastery. On the basis of the seal-inscriptions, the site under excavation has firmly been identified with the locale of the famous Buddhist monastery *Raktamrittika-vihara* of Hiuen Tsang's accounts, which stood in the neighbourhood of Karnasuvarna, the metropolis of the Gauda kingdom of the seventh century A.D.

II. EPIGRAPHY

SANSKRITIC AND DRAVIDIC INSCRIPTIONS[1]

ANDHRA PRADESH

1. VAIDUMBA INSCRIPTIONS, DISTRICT CUDDAPAH.—A Telugu inscription from Vandadi in characters of about the ninth century belongs to Gandatrinetra Vaidumba-maharaja and refers to the battle of Mudumaduvu fought against Nolambi, to Erey-amma, the ruler of Pulluvolpul, and to Subadeva, son of Prabhuteja-Chola (cf. *Andhra Pradesh Government Report on Epigraphy, 1965,* Nos. 15 and 16). Another Telugu inscription from Reddivaripalle, belonging to Gandatrinetra Sri-Viramaharaja, refers to Gandara-Mallikarjuna and records the death of Subadeva, son of Prabhuteja-Chola.

2. CHOLA INSCRIPTIONS, TIMMASAMUDRAM, DISTRICT CUDDAPAH.—A Tamil inscription on a slab kept in front of a ruined Siva temple, dated in the second year (A.D. 1071-72) in the reign of the Chola king Rajakesarivarman Rajendra (Kulottunga I) records a gift of land for daily worship, offerings, maintenance of priest and *pidarar* reciting *tiruppadiyam* to god Rajendrasolavitankar in the temple of Devarkal-joti-mahadevar at Veppur in Kilaimarayapadi in Irattapadikonda-solamandala, by Chenta-maraikkannan Arantangiyan of Ambar in Ambar-nadu.

Another Tamil inscription on a separate stone in the same place, dated in the sixth year (A.D. 1068-69) in the reign of Virarajendra, records the construction of the temple of Mahadevar at Veppur in Kilaimarayapadi, by Jayamkonda-soli, queen of Pottappichchola-Rajarajadevar, and the renewal, by her, of a previous endowment of land for the enjoyment of the deity. It also records a gift of land for maintaining the temple drummers.

3. INSCRIPTIONS, TIMMASAMUDRAM, DISTRICT CUDDAPAH.—An undated inscription in Tamil characters of about the twelfth century, engraved on a stone in front of a ruined Siva temple, records the assignment of paddy from specified lands out of the monsoon, winter and summer crops for the festival in the month of Masi to god Deva-gal-joti-nayakar, by Karikalasolappidakkalppemmadi-devar and [Ti]indisvarar.

Another undated inscription in Tamil characters of about the thirteenth century, engraved on another slab in the same place, belongs to the Chitramela and records an

[1] Information from: 5-6, the Director of Archaeology and Museums, Andhra Pradesh; 7, the Superintending Archaeologist of the Survey, Mid-eastern Circle; 10 and 53, the Director of Archaeology, Kerala State; 12-13, Professor K. D. Bajpai, University of Sagar; 14, Shri V. S. Wakankar, Ujjain; 17, Dr. H. D. Sankalia, Deccan College, Pune; 18, Dr. P. B. Desai, Director, Kannada Research Institute, Dharwar; 20 and 26, the Director of Archaeology, Mysore State; 29, the Director of Archaeology and Museums, Rajasthan; 30-31, Shri D. Handa, Sardarshahr; 35-38 and 52, the Director of Archaeology, Tamil Nadu; 54, the Department of Archaeology, Uttar Pradesh; and the rest, the Chief Epigraphist of the Survey.

endowment for food offerings and daily worship to god Umaskanda-sahitar *alias* Chitrameli-vitankar in the temple of Dovarkal-joti-mahadevar at Veppur by the Nattavar of Veppur, Andappur, etc.

4. COPPER-PLATE CHARTERS, NAVODAYA SAMITI, HYDERABAD.—Five sets of copper-plates were acquired, of these three were found at Temburu, District Srikakulam and the remaining two at Tumulaguda, District Nalgonda. One of the Temburu sets, written in Sanskrit language and Southern characters of the fifth-sixth century A.D. was issued from Simhapura in the 40th year in the reign of *Maharaja* Umavarman and records the grant of the village Honarenga as an *agrahara* to the *brahmana* Bhartrisarman of Vasishtha-*gotra* by the ruler for the merit and fame of his son Vasushenaraja.

Another Temburu set, written in Sanskrit language and in the Eastern variety of early Nagari characters of about the ninth century, belongs to the reign of *Maharaja* Anantavarman of the Ganga dynasty and records a grant, by the king, of the village Sividi to the *brahmana* Gochchhadikshita of Bharadvaja-*gotra*. The inscription is not dated in any year but the grant was made in the month of Margasirsha, on the day of *amavasya* when there was a solar eclipse.

The third set from the same village, written in Sanskrit language and in Telugu-Kannada characters, is dated in Saka 1051 (A.D. 1129-30) and belongs to the fifty-fifth year in the reign of Anantavarman Chodaganga. It records that the king granted Gordabi along with sixteen other villages in Erada-vishaya, in Kalingadesa to his confidential servant Chodaganga when the king was encamped at his headquarters in Nivali in Utkaladesa.

Both the Tumulaguda sets, written in Sanskrit language and Southern characters, belong to the Vishnukundin dynasty. One of them, in characters of about the fourth-fifth centuries A.D., was issued in the thirty-seventh year of the reign of *Maharaja* Govindavarman, son of *Maharaja* Madhavavarman, and grandson of *Maharaja* Indravarman. It records that the king granted two villages called Embudala and Penkapara to the *vihara* of the senior-queen (*agra-mahishi*) Parama-mahadevi. The other set refers itself to the reign of Vikramendra-bhattarakavarman *alias* Uttamasraya and is dated in his eleventh regnal year and in Saka 488 (A.D. 566-67). It records the grant of the village Irundoro, by the king, to the same *vihara* built at Indrapura. It also refers to the defeat of the Pallava ruler Simha by Uttamasraya.

5. COPPER-PLATE CHARTER, DISTRICT KARIMNAGAR.—This charter belongs to the reign of Kakatiya Ganapatideva and refers to the settlement of a dispute regarding the distribution of canal waters between some villages.

6. COPPER-PLATE CHARTER, DISTRICT SRIKAKULAM.—This inscription belongs to the reign of Eastern Ganga king, Vajrahasta II, and records the grant of an *agrahara* by the ruler.

BIHAR

7. INSCRIPTIONS, MUNDESVARI TEMPLE, RAMGARH, DISTRICT SHAHABAD.—Pilgrims' records engraved in Siddhamatrika characters of about the eighth century at the site of the temple of Mundesvari contain names such as Prabhasa Krishnah, Pradyumnah, etc. One of them reads: [.] *nyam samadhistha janah.*

GUJARAT

8. KSHATRAPA INSCRIPTION, BHUJ, DISTRICT KUTCH.—This fragmentary inscription, discovered at Andhau, District Kutch and now preserved at the Kutch Museum, is in Prakrit language and Brahmi characters. It refers to the reign of a king (name lost) who was a descendant of Kshatrapa Ysamotika in year 11, evidently of the Saka era. It records the erection of a memorial pillar (*1967-68,* p. 52, no. 9).

9. ABHIRA INSCRIPTION, BHUJ, DISTRICT KUTCH.—This damaged inscription in Brahmi characters of the third-fourth centuries A.D., and in Sanskrit language, was discovered at Daulatpur, District Kutch, and is now preserved in the Kutch Museum. It refers to the reign of a ruler (name illegible) described as *Vasishthiputra* and to his regnal year which is not clear. It also mentions a certain Abhira Isvaradeva, (*1967-68,* p. 52, no. 8, and p. 18, no. 19).

KERALA

10. INSCRIPTION, KURUVATTUR, DISTRICT PALGHAT.—This inscription in Malayalam language and Vatteluttu characters contains probably a reference to the famous Kakkasseri Bhattattiri who defeated Uddanda-sastri in *sastraic* argumentation.

11. INSCRIPTION, MULLASSERY, DISTRICT TRICHUR.—Dated in the month of Midina (*Mithuna*) when Jupiter was in Medam (*Mesham*), this epigraph in Malayalam language engraved in Vatteluttu characters of about the thirteenth century records an agreement in respect of the villages Perur, Amirdamannalam, Irayiranellur and another (name not clear), arrived at, when Bhumidharar-Ayira-tiruvadi was ruling over the country.

MADHYA PRADESH

12. SEALING-INSCRIPTIONS, TRIPURI, DISTRICT JABALPUR.—One clay sealing found in the excavations at Tripuri bears the name Mahasena, grandson of Simhasena. Of the five other clay sealings of the Bodhi rulers from the same place, two mention the name Sivabodhi and two others Vasubodhi. The fifth reveals a new name Sribodhi.

13. SEALING-INSCRIPTION, UJJAIN, DISTRICT UJJAIN.—The clay sealing bears the legend *Yavanikanam* (of the Yavanikas), in Brahmi characters of the second century A.D. (*1967-68* p. 56, no. 37, from the same source).

14. INSCRIPTION, UJJAIN, DISTRICT UJJAIN.—A badly-mutilated inscription from the Bahadurganj area of Ujjain, refers to the defeat of some Muslim invader by the Paramara ruler Devapala of Ujjain.

15. TWO JAINA IMAGE INSCRIPTIONS, VIDISHA, DISTRICT VIDISHA.—Engraved on the pedestals of two Jaina images discovered at Durjanpur and now preserved in the local museum, these inscriptions are in Gupta characters of about the fourth century A.D. While one of them refers to the making of the image of Chandraprabha by *Maharajadhiraja* Ramagupta (pl. LIIA), the other one refers to the making of the image

of Pushpadanta by the same ruler. The king Ramagupta may be identified with the imperial Gupta ruler known to be the son of Samudragupta.

MAHARASHTRA

16. BRAHMI INSCRIPTIONS, PAUNI, DISTRICT BHANDARA.—Four votive inscriptions in Prakrit, engraved on pillars, in characters of about the second century B.C. discovered at the place record the gifts made (i) by one Naga, a scholar in the five *Nikayas*, (ii) by the monk Utaraka, and (iii) and (iv) by an *Upasika* named Visamita; these evidently refer to the gift of the pillars on which they are engraved.

17. BRAHMI INSCRIPTION, ANCIENT CAVE, PALA, DISTRICT PUNE.—Engraved in characters of about the first century B.C., this Prakrit inscription commences with the expression *Namo Arahantanam* and records that the cave and a cistern were caused to be made by a certain Bhadamta Idarakhita probably along with some others.

MYSORE

18. COPPER-PLATE CHARTER, HULI, DISTRICT BELGAUM.—This charter in Sanskrit engraved in Telugu-Kannada characters of the sixth century and dated in the reign of the Badami Chalukya king Mangalaraja, consists of three plates with a ring and a seal depicting a tigress and a cub (pl. LIIB). It records a grant of land to a Jaina monastery by the Sendraka chief Ravisakti, son of Kannasakti. This is the second copper-plate record of Mangalaraja (Mangalesa), the other being the Nerur grant (*Indian Antiquary*, VII, pp. 161-62).

19. BRAHMI INSCRIPTIONS, SANNATHI, DISTRICT GULBARGA.—This Buddhist site has yielded a few more Prakrit inscriptions, mostly fragmentary, in Brahmi characters of about the second and third centuries A.D. One of them, badly damaged, in characters of about the third century A.D. belongs to the reign of king Vasithiputa siri Sa[ta]... Another reads *Akhapatalika*[*sa*]. A third inscription refers to Mahasathavaha Agisama.

20. HERO-STONE INSCRIPTIONS, CHIKKANYA, DISTRICT MYSORE.—Two among the several hero-stones discovered here bear inscriptions in characters of the ninth century mentioning the Ganga prince Satyavakya Permanadi and record the death of heroes in some battle.

21. HOYSALA INSCRIPTION, KANNUR, DISTRICT MYSORE.—This Tamil inscription on a slab, set-up on the bank of a tank in the village, in characters of the twelfth century belonging to the reign of Hoysala king Vishnuvardhana I (Vira-Ganga Poysala), records the setting-up of the stone in Kannanurmangalam in Kurinji-nadu in memory of Bhumiyalan Kanchakamundan and his son Machchi in a ruinous riot (*uralivu-pusal*) by Ponnammai and Kulaiyanan, son of Machchiyanan.

22. VIJAYANAGARA INSCRIPTIONS, KARNAD, DISTRICT SOUTH KANARA.—Of the two inscriptions in Kannada language and characters, engraved on slabs set up inside the Siva temple (now known as Harihara-kshetra) at Karnad, one, badly worn out, belongs

to the reign of Harihara II and mentions Nagamnavodeya as ruling over Mangaluru-rajya. It records a gift of land the details of which are not clear. The other one, dated in Saka 1360 (A.D. 1437), belongs to the reign of Devaraya II and registers a gift of land for the daily worship and offerings to god Somayadeva by Amnappavodeya, ruling over Mangaluru-rajya. His subordinate was Nagarasa, governing Karnadu.

23. VIJAYANAGARA INSCRIPTIONS, SURATKAL, DISTRICT SOUTH KANARA.—Of the two Kannada inscriptions engraved on slabs now lying in front of Govindadasa College, Suratkal and originally from Panamburu, one belongs to the reign of Devaraya II and is dated in Saka 1356 (A.D. 1434). It records the sale of *brahmadaya-mula* to Birum-amna-setti of Tolaharambali by Madaheggade of Panamburu and two others when Deva-rajavodeya was the administrator of Mangaluru-rajya. The other inscription, dated in Saka 1372 (A.D. 1450) and belonging to the reign of Mallikarjuna, records some gift (details not clear) by Ganapanna who was ruling over Mangaluru-rajya, under the orders of Mahapradhana Singanadannayaka.

24. ALUPA INSCRIPTION, UDIYAVARA, DISTRICT SOUTH KANARA.—This inscription in Kannada language and characters of the thirteenth century, engraved on a slab set up in front of Bhaumesvara temple, belongs to the reign of queen Ballamahadevi, ruling from the palace at Udayapura. The record, which is damaged, seems to specify the quantum of taxes to be collected from four villages, viz., Bayaluru, Kodengarupadi, Kammaturu and Mayarpalli.

25. RASHTRAKUTA CHARTER, GARUGADAHALLI, DISTRICT TUMKUR.—Dated Saka 704 (A.D. 782) and belonging to the first year of the reign apparently of Dhruva Dhara-varsha, this copper-plate inscription mentions his son Ranavaloka Khambayyarasa and records that the ruler, while he was encamped at the village of Tetmamigudal, made a grant of the village to the Brahmana Madhava *alias* Brahmaviravallabha. It also records the grant of the village Gottemadi by Brahmaviravallabha to the *rajasala* at Talavanapura, in which he had installed an image of Bhagavati.

26. HOYSALA HERO-STONE INSCRIPTIONS, DISTRICT TUMKUR.—A hero-stone inscription at Undiganal, belonging to the reign of Vishnuvardhana, records the death of a hero while fighting a tiger. Another, from Jayachamarajapura, belonging to the reign of Ballala III, records the death of a hero in a cattle raid.

ORISSA

27. SCULPTURE INSCRIPTION, SAMAJAT, DISTRICT KEONJHAR.—This inscription in fourteen lines on a Siva-*tandava* sculpture, engraved in Brahmi characters of about the fourth century A.D., throws welcome light on the rule of Satrubhanja.

PONDICHERRY

28. PANDYA INSCRIPTIONS, TIRUNALLAR, COMMUNE KARAIKKAL.—Engraved in characters of the thirteenth century, these two Tamil inscriptions from the Dharbha-ranyesvara temple belong to the reign of the Pandya king Jatavarman Kulasekhara. Dated in his twenty-second regnal year, both record that a certain Periyanayan Mudi-

chchonattukkonar owed 25,000 *valal-valitirandan-panam* to one Savaripperumal Monnaimamarudan Akalankanadalvar of Ambar *alias* Vikramasolapuram and absconded and that on the latter's petition the *nattavar* intervened and sold out the lands of the debtor to the creditor for the same amount, as the former had no heir and as there was none to purchase the above property.

RAJASTHAN

29. INSCRIPTION, THIKANA SARUNDA, DISTRICT BIKANER.—Dated Vikrama 1595 (A.D. 1538-39), the inscription records the construction of a temple by king *Maharajadhiraja* Samsarachand.

30. JAINA BRONZE IMAGE INSCRIPTIONS, SARDARSHAHR, DISTRICT CHURU.—Nagari inscriptions are engraved on four bronze images of Jaina *tirthankaras* under worship in the Parsvanatha temple at Sardarshahr. The earliest inscription, dated Vikrama 1493, records the installation of the image of Jaina *tirthankara* Padmaprabha by Jinaprabha *suri* of the Kharatara-gachchha, while the second, dated (Saka) 1499, mentions the names of Jaynanda, Srutitilaka and Gunakara *suri*. The third inscription, dated (Saka) 1527, records the setting up of the image of Santinatha by Cha(?)kra *suri* of the Upakesagachchha, while the latest, dated (Saka) 1608, refers to the installation of the image of Sumatinatha by Jinamanika *suri* of the Kharatara-gachchha.

31. SATI STONE INSCRIPTION, SARDARSHAHR, DISTRICT CHURU.—A stone-slab bearing a Nagari inscription, dated Vikrama 1241, was dug out from an old well.

32. SONGIRA CHAHAMANA INSCRIPTION, BHINMAL, DISTRICT JALOR.—Dated in Vikrama 1328, this Sanskrit inscription, belonging to the reign of *Maharajakula* Chachigadeva, registers some royal grant made for conducting worship to the deity Arbudesvara when the king was ruling from Srimala.

33. CHAHAMANA INSCRIPTION, LADNU, DISTRICT NAGAUR.—This fragmentary Sanskrit inscription, recording the death of a lady (name lost) who was the wife of Indra and mother of Alada, belongs to the reign of Chahamana Arnoraja. Dated in Vikrama 1191, this record provides the earliest known date for Arnoraja's reign.

34. PARAMARA INSCRIPTION, DEVAKHETAR, DISTRICT SIROHI.—Dated in Vikrama 1202, this inscription, in Sanskrit language influenced by local dialect, belongs to the reign of Paramara Jasadhavaladeva (i.e., Yasodhavaladeva).

TAMIL NADU

35. INSCRIPTIONS, ERODE, DISTRICT COIMBATORE.—Two inscriptions in Tamil characters of the tenth century were copied from the Vishnu temple. One refers to some gifts by a *brahmana* lady of Kanchikuri in Salaigrama to god Pallikondadevar of Irodu. Another records the gift of a bronze bell to Jalasayanattu Palli-aruluginradevar by Nattan Achchan of Arangali Karungi.

36. HERO-STONE INSCRIPTION, VADIVULLAMANGALAM, DISTRICT COIMBATORE.—Two slabs forming the side and rear of a dolmen contain the figure of a hero and an in-

scription respectively. The latter records the death of Alagan Kali of Vettuva community in a battle in the reign of Rajendrachola, the conqueror of Purvadesa, Gangai and Kadaram.

37. VATTELUTTU INSCRIPTIONS, VALLIERACHCHAL, DISTRICT COIMBATORE.—Out of the six Tamil inscriptions in Vatteluttu characters of about the eleventh century copied from the Mandanisvara temple, one inscription, dated in the seventh year of the reign of Kalimurkha Vikramachola, refers to the erection of the *mukha-mandapa*. A second undated record refers to Virasangatapperumpalli. A third inscription, a fragment, refers to the thirty-eighth year in the reign of Konattan Virasola-peruman.

38. PILLAR INSCRIPTIONS, VALLIERACHCHAL, DISTRICT COIMBATORE.—Three inscriptions in Tamil characters of about the eleventh-twelfth century, engraved on three pillars in the *mukha-mandapa* in the Mandanisvara temple, record the gift of the stone pillars respectively by (i) Uttamasola-Tamilavel *alias* Adan Kuliyan of Sirrilodu belonging to the Vellalan-Kadan community, (ii) Uttamasola-Mummudisolanarayan from the same place and of the same community, and (iii) Tennaven-muvendavelan *alias* Vindan Marayan of Muthur, belonging to the Vellalan-Maniyar community.

39. INSCRIPTION, ADHAMANKOTTAI, DISTRICT DHARMAPURI.—Engraved in characters of about the twelfth century on a jamb-stone built into the compound wall of a local Vishnu temple, this Tamil inscription records some grant made by *Jainottama* Somannan, the disciple of Madhavachandra-bhattaraka of Sri-Mulasangha to a temple constructed by him in the capital *(rajadhani)* Mayidiramangalam.

40. NOLAMBA INSCRIPTION, NAVALAL, DISTRICT DHARMAPURI.—The epigraph in Kannada characters of the tenth century is dated in the fifteenth year in the reign of Vira-Nolamba. It records the death of Prituva, the son of Puliyanna who was ruling over Navilur, who fought to save the honour of certain women.

41. INSCRIPTION, KALIYUR, DISTRICT NORTH ARCOT.—The inscription in Tamil characters of the eleventh century is dated in the seventh year in the reign of a king, whose name is not given and records grant of lands to god Tiruvirattanam-udaiya-mahadevar in Kaliyur in Kaliyur-nadu in Kaliyurkkottam and to god Panchanadivana-Isvaram-udaiya-mahadevar of Turaimugam by Panchanadi Si-Kittan *alias* Kurukulat-taraiyan.

42. PALLAVA INSCRIPTIONS, KILSATTAMANGALAM, DISTRICT NORTH ARCOT.—One of these Tamil inscriptions, dated in the fourteenth year (*circa* A.D. 744) in the reign of Nandivarman II, engraved on a rock, records the gift of seven *kalanju* of gold for feeding ascetics in the monastery by Andai Ilaiyar Pavanandi. Another, dated in the fifty-sixth year (*circa* A.D. 789) in the reign of the same king, records the endowment of seventeen *kalanju* of gold for the monastery by Pavanandi for the merit of Pundi Muppavai, the daughter of Jinadiyar of Vilukkam. The third, in characters of the ninth century, dated in the sixth year in the reign of Kampavarman, records the renovation of a temple, and a *pali*, the construction of *mukha-mandapa* for the temple and a shrine for Iyakki-bhatari (*Yakshi*) and the gift of a big bell—all by Madevi, the wife of Kadagadiyaraiyar (cf. *Seminar on Inscriptions, Speeches and Papers*, pp. 157 ff).

43. VIJAYANAGAR INSCRIPTION, TEN-ILUPPAI, DISTRICT NORTH ARCOT.—This Tamil inscription in characters of the fifteenth century, records the grant of the village Iluppai in Attipparru for worship and offerings by Vijayarayamaharayar to god Mayilaradevar in the gateway of the palace.

44. INSCRIPTION, VAKKADAI, DISTRICT NORTH ARCOT.—This incomplete inscription in Tamil characters is dated in the fourth year (A.D. 1055-56) in the reign of Chola Rajendra II. It registers the gift of land, made tax-free, as *vedabhogam* for teaching *Taittiriya-vedam*, by purchase from the *sabhai* of Nigarilisolach-chaturvedimangalam in Pariyur-nadu, a sub-division of Palkunrak-kottam in Jayangondasola-mandalam by Satti Arinjiyappirattiyar, the mother of the Gangar.

45. CHOLA INSCRIPTION, BELUR, DISTRICT SALEM.—This Tamil inscription, engraved on a stone set up on the roadside in characters of about the tenth century, is dated in the third year in the reign of Virapandiyan talai-konda Ko-Parakesarivarman. It records the levy of four and a quarter *kalanju* on the villages of Turivi-nadu by Akalankan Malaiyaradittan *alias* Sembiyan Miladudaiyan of Bhargava-gotra.

46. INSCRIPTION, NAMAKKAL, DISTRICT SALEM.—This label inscription, engraved in Grantha characters of about the seventh-eighth centuries on the rock surface between the Narasimhasvami and Lakshminarayana temples, reads *Sridhara*.

47. INSCRIPTION, PALLATTADANUR, DISTRICT SALEM.—This epigraph on a hero-stone, engraved in Vatteluttu characters of about the eighth century, is dated in the year opposite to the twelfth year in the reign of Isvaravarman. It records the death of a follower of Perumilavaraiyar when Kongavarmaraiyar attacked [Nonkambur].

48. INSCRIPTIONS, KOVILADI, DISTRICT THANJAVUR.—This damaged inscription in Tamil characters of the eleventh century, engraved on the *pattika* and the *tripatta-kumuda* of the *adhishthana* of the central shrine in the Divyajnanesvara temple, dated in the fourth year of Rajakesari, seems to refer to the construction of the *sri-vimana* by an individual. Another Tamil inscription in characters of about the thirteenth century, engraved on the door-post of the *mahamandapa* in the temple, records that the entrance (*tiruvasal*) was the gift by a captain in the navy of Minavan (i.e., the Pandya).

49. MUTTARAIYAR INSCRIPTION, KIRANUR, DISTRICT TIRUCHCHIRAPPALLI.—Dated in the thirteenth year in the reign of Ko-Ilango-Muttaraiyar, the epigraph engraved in Tamil characters of about the ninth century records grant of land by the *sabhaiyar* of Kiranur to provide for a festival for god Perumanadigal of Uttamadani-Isvaram in Kiranur (cf. *Inscriptions* (*Texts*) *of the Pudukkottai State*, No. 237).

50. CHOLA INSCRIPTION, PULIYUR, DISTRICT TIRUCHCHIRAPPALLI.—Dated in the thirty-seventh year (A.D. 1214-15) of Chola Tribhuvanavira (Kulottunga III), this Tamil inscription records the survey of lands in Puliyur, arranged by Chedirayadeva and made by a rod, the length of which is indicated by two crosses flanking the inscription and is also stated to be twelve feet (*adi*) and one finger length (*vilakkadi*). It measures three metres and fifty-six centimetres.

51. INSCRIPTIONS, PULIYUR, DISTRICT TIRUCHCHIRAPPALLI.—Engraved in characters of the thirteenth century, this Tamil inscription on the *jagati* of the *ardha-mandapa* in the Vyaghrapurisvara temple records the gift of utensils of worship, the door-frame at the entrance and the step in the *agra-mandapa* in the temple of god Adanmanisvaramudaiyar in Puliyur.

52. PANDYA INSCRIPTIONS, TARUVAL, DISTRICT TIRUNELVELI.—Dated in the seventh year in the reign of Kulasekharadeva, a Tamil inscription engraved on the south wall of the Valavallapandisvara temple records a gift by Kaladi Eluttann Kaladi Raviy Siraman Uyyavandan and some other individuals for performing Ardhasama in front of Kshetrapala-pillaiyar. Another undated inscription on the south wall of the *mahamandapa* states that on scrutinising the evidence put up by the appellants, the royal order was issued regarding water being let out from the tank of Vikramapandya-chaturvedimangalam for irrigating the *devadana-iraiyili* lands of Valavallapandisvarar.

53. INSCRIPTION, TENKASI, DISTRICT TIRUNELVELI.—Dated Kollam 720 (A.D. 1544) in the reign of Vira-Marttandavarman, this Tamil inscription records the revival of daily worship in the temple by Vir-Marttandan *alias* Chiravay Muttavar in Kollam 700 and the performance of the five *mahadanas* by him. It also refers to the construction of the temple formerly by Arikesari Parakramapandya and the unrest (*kshobham*) in later times.

UTTAR PRADESH

54. SEALING-INSCRIPTIONS, DISTRICT PRATAPGARH AND KANPUR.—A sealing found from Kharhar, District Pratapgarh, bears the legend *Traividyasya* in Gupta characters. Another from Jajmau, District Kanpur, contains the Buddhist creed.

55. INSCRIPTIONS, PALETHA, DISTRICT TEHRI-GARHWAL.—Two badly worn out inscriptions, one of them now broken in two pieces, lying outside the temple of Buddha, are engraved in Sanskrit language and Northern characters of about the seventh century. One of them contains references to king Adivarman, *Paramabhattaraka Maharajadhiraja Paramesvara* Kalyanavarman, Adityavardhana and his *dauhitra* Karkaravardhana. In the other broken epigraph, the names of Kalyanavarman and Adityavardhana occur.

56. INSCRIPTION, UTTARKASHI, DISTRICT UTTARKASHI.—An inscription, engraved on the decagonal brass stem of the trident set up in front of the Visvanatha temple in Sanskrit language and Northern characters of about the seventh century, states that king Ganesvara had caused to be constructed a temple for Siva and that he subsequently passed away; his son Guha set up the trident (*Sakti-stambha*) in front of the temple.

ARABIC AND PERSIAN INSCRIPTIONS[1]

ANDHRA PRADESH

1. INSCRIPTIONS OF THE QUTB SHAHIS, DISTRICT HYDERABAD.—A new inscription of Ibrahim, found at Hyderabad, records that a spacious tomb was erected over the remains of 'Ainu'l-Mulk Ghazi, a favourite of the king, in A.H. 975 (A.D. 1567-68), by Mujahid Khan. Another epigraph from the same place, records the construction of a mosque in A.H. 1002 (A.D. 1593-94) by Mirza Husain Baig by the order of the king Muhammad Quli. An inscription from Chinna (Chhota) Mangalaram, which is perhaps the same as the one mentioned (but not described) in the *Annual Report of the Archaeological Department of H.E.H. Nizam's Dominions,* for the year 1343 F/1933-34 A.C., contains the text of a royal *farman* issued in A.H. 1084 (A.D. 1673): it records the endowment made under royal orders of the revenue of the village Mangalwaram situated in the *sarkar* of Janwada *alias* Hasnabad to meet the expenses of free-kitchen (*langar*), lighting, etc., and the stipends of the attendants of the tomb of the late Neknam Khan, to come into force from the beginning of the Shuhur year 1074 (25th May, A.D. 1673); this is thus a copy of the *farman* engraved on a tablet set up in the tomb of the said nobleman at Golconda.

2. MISCELLANEOUS INSCRIPTIONS, DISTRICTS HYDERABAD, MAHBUBNAGAR AND NIZAMABAD.—A number of epitaphs belonging to men of different stations in life were copied at Golconda, Hyderabad and Kundrug. Of these, the most important are those, found at Golconda, of the sons of the celebrated Qutb Shahi prime-minister and king's deputy Amir Kamalu'd-Din Husain Ardastani, entitled Mustafa Khan: one records the demise of Mirza 'Ali who died in A.H. 966 (A.D. 1559) and the other, of Shah 'Abdu'l-Qasim, who expired in A.H. 971 (A.D. 1564). Other epitaphs, also from the same place, record the demise and mark the graves of Sayyid Abu Talib Astarabadi (*d.* A.H. 996=A.D. 1587-88), Amir Sayyid Husain Mustafa Khan (*d. circa* sixteenth century A.D.) and Mir Yahya, son of Mirza Nizamu'd-Din Ahmad (A.H. 1082=A.D. 1671).

Of the two epitaphs in Kundrug, District Mahbubnagar, one records the death of Haji Malik Muhabbat in A.H. 1010 (A.D. 1602), and the other of Muhammad Husain, son of Khwaja Muhammad Qasim Shirazi, who passed away in A.H. 1081 (A.D. 1670).

The epigraphs from Hyderabad include those belonging to Mir Mustafa (*d.* A.H. 1085=A.D. 1674) and Sharifu'd-Din Yusuf (*d.* A.H. 1121=A.D. 1710).

An epigraph from Pitlapur (Fathullapur), District Nizamabad, assigns the construction of a mosque designated as *Mu'askari-Masjid,* to one Malik 'Abdu'llah in A.H. 1014 (A.D. 1605-06). There is another record at the same place, dated in the same year, which was inscribed by Shamsu'd-Din 'Ali ash-Shirazi; comprising religious text, it also belongs to the same mosque.

An inscription from Hyderabad records the excavation of a well in A.H. 1093 (A.D. 1682), by Shah Ghadanfar.

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[1] Dr. Z. A. Desai, Superintending Epigraphist, Arabic and Persian Inscriptions of the Survey, Nagpur, assisted by Shri A. A. Kadiri and Shri M. F. Khan, Epigraphical Assistants, found and copied and/or examined and reported on about four hundred inscriptions during the year including those described above, except no. 13 which was received from the Director of Archaeology, Maharashtra, and nos. 17-18, which were copied by Shri N. G. Ganam, Technical Assistant, Archaeological Survey of India, Western Circle, Baroda.

3. INSCRIPTION OF THE BAHMANIS, DISTRICT MAHBUBNAGAR.—An inscription from Kundrug set up during the reign of Shamsu'd-Din Muhammad Shah, son of Humayun Shah, states that the mosque (on which it appears) was built in A.H. 875 (A.D. 1470-71) at the instance of Khan-i-A'zam Farhat Khan, and through the efforts of Maliku'sh-Sharq Ma'ruf Khani.

GUJARAT

4. INSCRIPTION OF THE TUGHLUQS, DISTRICT AHMADABAD.—A new inscription of Firuz Shah Tughluq, recording the construction of a Jami' mosque in A.H. 789 (A.D. 1387) by Khanshah, son of 'Umar, who is mentioned in the text as the muqti' of the place, was found at Dekawara.

5. INSCRIPTIONS OF THE MUGHALS, DISTRICTS AHMADABAD AND PANCHMAHALS.—An epigraph of Aurangzeb recording the construction of a mosque in A.H. 1077 (A.D. 1666-67) was found at Ahmadabad. According to an inscription from Godhra, dated A.H. 1149 (A.D. 1736-37), in the reign of Muhammad Shah, Babu Khan, a resident of Tiagam and deputy of (the Maratha chief) Rao Baji, carried out repairs to a mosque.

6. INSCRIPTIONS OF THE SULTANS OF GUJARAT, DISTRICTS AHMADABAD, PANCHMAHALS AND RAJKOT.—A new epigraph of Mahmud I, found at Godhra in Panchmahals District, records the erection of a mosque and construction of a well at 'Muhammadabad *alias* Champaner' in A.H. 905 (A.D. 1499-1500) and, therefore, the epigraphical tablet must have originally belonged to Champaner in the same district. A damaged record of the same king, from Maliya, District Rajkot, dated A.H. 912 (A.D. 1506-07), which records the construction of a mosque, is quite interesting in that it seems to refer to Jam Tamachi (though in what connexion, it is not clear) and also to the designation of the village (probably Maliya) by the new name Rasulabad. An interesting and also important inscription (pl. LIII A) of Muzaffar II was found at Ahmadabad. Dated in the Shamsiyya year 6th, A.H. 922 (October 1516—January 1517), it assigns the construction of a mosque to Rani Hir Bai, mother of that king and wife of Mahmud I. Another record of Muzaffar II, found at Halol, District Panchmahals, records the construction of a mosque by Ahmad Khan in A.H. 930 (A.D. 1523-24). A badly damaged record, found at Morvi, District Rajkot, recording the construction of a mosque, seems to bear the date A.H. 961 (A.D. 1553) and may thus belong to the reign of either Mahmud III or Ahmad III.

7. INSCRIPTION OF THE NAWWABS OF RADHANPUR, DISTRICT BANASKANTHA.—Three inscriptions dated A.H. 1221 (A.D. 1806-07), A.H. 1222 (A.D. 1807-08), 1239 (A.D. 1823-24), were found at Radhanpur.

8. MISCELLANEOUS INSCRIPTIONS, DISTRICTS BANASKANTHA, MEHSANA, PANCHMAHALS AND RAJKOT.—A fragmentary epigraph found at Maliya, dated A.H. 924 (A.D. 1518) and inscribed by one Muhammad, records the names of a local official and the judge (*qadi*). An undated record from Godhra, records the construction (evidently of the mosque on which it is found) by Khwaja Danish, a subordinate of Muhammad Beg Khan, a popular official of Aurangzeb's reign, of Gujarat. A damaged inscription from Radhanpur, recording the construction of some structure in A.H. 1140 (A.D. 1727), mentions Nawwab

Sarbaland Khan Bahadur, as the governor and Khwaja Muhammad Amin, as the *faujdar*. An epigraph from Sidhpur, District Mehsana, mentioning the repairs carried out to the 'Idgah in A.H. 1250 (A.D. 1834), furnishes a very interesting piece of information that it was originally constructed by Achchhu Bu, daughter of Sher Khan Poladi, who is none other than the celebrated nobleman who flourished towards the end of the Sultanate.

JAMMU & KASHMIR

9. MISCELLANEOUS INSCRIPTIONS, DISTRICT SRINAGAR.—All the inscriptions copied from Anantanag and Srinagar Districts, numbering about one hundred and twenty-five are epitaphs, most of which belong to men of different vocations and stations in life, quite a few of whom are either Iranian or of Iranian origin. Three of these epitaphs also bear the dates in a different era (probably some Kashmiri Era): One of these bearing the year 56 refers to the construction of his own grave (carried out in his life-time) by one Khwaja Miyan. Another bearing the year 67 relates to the grave of Malik Jalal, a descendant of Ghori Khan, and the third recording the demise of Malik Musa, bears the year 78. The remaining epitaphs range in their dates between A.H. 859 (A.D. 1454-55) and A.H. 1195 (A.D. 1781). Found in different localities of Srinagar, one of them records the demise of Haibat Khan Qarlagh described as the grandson on son's side of Sultan 'Alau'd-Din Qarlagh of Pakhli and on daughter's side of Sultan Zainu'l-'abidin. The others record the death of Rabi'a Khatun (A.H. 859=A.D. 1454-55), Salamat Khatun (A.H. 866=A.D. 1461-62), Makhduma Khatun (A.H. 870=A.D. 1466), Sa'id Khan, the martyr (A.H. 889= A.H. 1484-85), Mulla 'Uthman (A.H. 898=A.D. 1492-93 A.D.), Maulvi Mahmud (A.H. 907=A.D. 1501), Maulana Jalal (A.H. 909=A.D. 1503-04), Khwaja Ya'qub (A.H. 981=A.D. 1573-74), Khwaja Habibu'llah (A.H. 996=A.D. 1587-88), Malik Baig Shaikh Timuri (A.H. 1000=A.D. 1591), Muhammad Quli Khan (A.H. 1014=A.D. 1605-06), Qadr Baig (A.H. 1015=A.D. 1606-07), Mujahid (A.H. 1050=A.D. 1640-41), Ghiyathu'd-Din Muhammad (A.H. 1059=A.D. 1649), Muhammad Baig Turkman (A.H. 1065=A.D. 1654-55), Khusraw Baig (A.H. 1074=A.D. 1664), Hafiz Amin (A.H. 1089=A.D. 1678), 'Abdu'r-Rahim (A.H. 1095=A.D. 1684), Mirza Fadlu'llah, son of Mirza Muhammad Sadiq, son of Mirza Mahdi I'timadu'd-Daula, son of Mirza Muhammad Sadiq, son of Mirza Mahdi I'timadu'd-Daula, son of Mirza Habibu'llah Sadr, son of Sayyid 'Ali (A.H. 1098=A.D. 1686-87), Muhammad Hadi, son of Muhammad Muqim Muqahri (A.H. 1101=A.D. 1690), Qadi Muqim (A.H. 1107=A.D. 1696), Mirza Muhammad Mahdi (A.H. 1109=A.D. 1698), Aqa Sandal (A.H. 1158=A.D. 1745), Maulvi 'Abdu'l-Ghani (A.H. 1169=A.D. 1755-56), Mirza 'Ali Akbar Khan, Safahani i.e. Isfahani (A.H. 1178=A.D. 1765), Mirza Hashim Safahani (A.H. 1180=A.D. 1766), Haji Mir Muhammad Salih Isfahani and Aqa Muhammad Taqi Isfahani (A.H. 1188=A.D. 1774), Ahmad Khan (A.H. 1188=A.D. 1774-75) and Muhammad Zaman, son of Haji Muhammad Sadiq Isfahani (A.H. 1195=A.D. 1781).

MADHYA PRADESH

10. INSCRIPTIONS OF THE MUGHALS, DISTRICTS DEWAS, EAST NIMAR, VIDISHA.—One more record of Jahangir, of the time of the governorship of Khan-i-Khanan and inscribed by the famous calligrapher Khalf a't-Tabrizi was found at Burhanpur, East Nimar District; it records the construction of an inn (locally known as Akbarisarai) by Lashkar Khan in A.H. 1028 (A.D. 1618-19). An inscription of Shah Jahan from Sham-

sabad, District Vidisha, assigns the construction of a mosque to Shams Khan in A.H. 1051 (A.D. 1641-42). An epigraph of Aurangzeb from Unchod (Kamalpur), District Dewas, recording the construction of the local 'Idgah by Muhammad Diya-i-Siddiqi in A.H. 1092 (A.D. 1681), mentions the Jagirdar Nawab Muhammad 'Ali Khan, the supervisor Dad Khan, the mason Khemraj and the scribe Maya Ram.

11. MISCELLANEOUS INSCRIPTIONS, DISTRICTS EAST NIMAR, SEHORE AND UJJAIN.—According to an inscription found at Naisamand in District Sehore, one Sayyid Hamza constructed a tomb and a well in his life-time in A.H. 884 (A.D. 1479). A slightly damaged record from Khatla in District Nimar East, dated A.H. 978 (A.D. 1571), mentions one Subhan Amin Malik, an official. An epigraph from Ujjain states that a desolate well was repaired by Khwaja Shakib Mukhtar Khani; its date is lost, but the builder was, as his appellation suggests, a subordinate of Mukhtar Khan, Mughal viceroy of Malwa in Aurangzeb's time. The death of one Yuli Baig, son of Jan Quli Baig, which occurred in A.H. 1119 (A.D. 1707), is reported in an epitaph found at Bahadurpur in the same District.

12. INSCRIPTION OF THE SULTANS OF MALWA, DISTRICT SHAJAPUR.—A damaged inscription from Agartala, District Shajapur, was on examination found to contain a new record of Hoshang Shah; it records the construction of a mosque by one Amjad Sultani.

MAHARASHTRA

13. INSCRIPTION OF THE MUGHALS, DISTRICT JALGAON.—At Tondapur was found a damaged epigraph of the time of Aurangzeb which states that Hatim (Baig) constructed a step-well for the merit of his brother Burhan Baig.

MYSORE

14. INSCRIPTIONS OF THE 'ADIL SHAHIS, DISTRICT GULBARGA.—Two new inscriptions found at Gulsaram furnish identical information namely, that a mosque and tank in the mausoleum (*maqam*) of the Shaikhu'l-Kabir of Gulsaram was constructed by 'Ali Khan, son of Adam, in A.H. 960 (A.D. 1553), in the reign of Ibrahim. A new inscription of 'Ali I, found at Yadgir records the construction of a mosque by Mirza 'Ali, son of Khwaja Hasan Kirmani in the Shuhur year 974 (i.e. A.H. 981=A.D. 1573). Another record from Shahpur, composed and inscribed by one Mir Muhammad, states that in the reign of Sultan Muhammad, a mosque was built by Hasan Aqa Khurshid Khan in A.H. 1037 (A.D. 1627).

15. INSCRIPTION OF THE BAHMANIS, DISTRICT GULBARGA.—A new inscription (pl. LIII B) of Firuz was found at Firozabad, which records the construction of a mosque by Ahmad, son of Husain, in A.H. 808 (A.D. 1406).

16. MISCELLANEOUS INSCRIPTIONS, DISTRICT GULBARGA.—An epitaph from Firozabad refers to the martyrdom attained by Khwaja Shamsu'd-Din Muhammad, son of Khwaja Samsam a'r-Rumi, of the city of Bursa (in Turkey) who was killed at the village Barafi (?), in Safar A.H. 824 (A.D. 1421). A record found at Sagar comprises

one more epitaph of a foreigner, Khwaja Zainu'd-Din 'Ali, son of Jalal, by name, who is stated therein to have belonged to Kashan (in Persia) and to Sagar, where he died in the year A.H. 923 (A.D. 1517).

RAJASTHAN

17. INSCRIPTIONS OF THE MUGHALS, DISTRICT NAGAUR.— A fragmentary and damaged record of Shah Jahan, dated Sha'ban A.H. 1047 (December, A.D. 1637), the legible portion of which contains the name of 'the village Kadana situated in the *pargana* Lodhana', was found at Nagaur. Another epigraph of the same king, also from Nagaur, records the construction of a mosque in Ramadan of the same Hijra year (January 1638) by Ishaq, son of Mulla Tahir Multani.

An interesting inscription of Aurangzeb from Didwana, (*1967-68,* p. 60) assigns the construction of a mosque, a well and a tank to 'the servant of the court' Kallol Ba'i, daughter of Hamid, son of Gopal, the *Mutrib* (Musician) in A.H. 1080 (A.D. 1670). Another inscription of the time of Aurangzeb from Nagaur, records the construction of a mosque in A.H. 1084 (A.D. 1673). The construction of two more mosques, one of them by Yatim Darwish, a disciple of Shaikh Taju'd-Din 'Abbasi Qadiri Nagauri, in A.H. 1088 (A.D. 1677), is mentioned in two records of the same emperor found also at Nagaur.

18. MISCELLANEOUS INSCRIPTIONS, DISTRICT NAGAUR.—At Didwana was found what is perhaps the earliest epitaph (*1967-68,* p. 60) to be found in the region; it records the demise, which took place in A.H. 605 (A.D. 1209), of the great and learned Imam, Rashidu'd-Din Jhu or Jha'u, son of Mahmud, son of Khwajgi, popularly known as Margir. Another interesting record found at the same place states that Sayyid Fardu'llah who was advised by the Holy Prophet (presumably in dream), of the existence at (the village) Paota of the sacred foot-print, brought it to the 'city' (i.e. Didwana) carrying it on his head; it bears the date A.H. 1080 (A.D. 1669-70).

III. NUMISMATICS AND TREASURE-TROVE[1]

ANDHRA PRADESH

1. BRITISH COINS, GUTTUR, DISTRICT ANANTAPUR.—A treasure-trove of three hundred and four silver coins of the period of East India Company during the reigns of William IV and Queen Victoria was discovered.

2. GOLD FANAMS, THIRUVENGALAPURAM, DISTRICT CUDDAPAH.—Twenty-one gold *fanams* with figures of lions were found in the village. They do not bear any legend.

3. VIJAYANAGARA COINS AND A GOLD DISC, ALAMASPUR, DISTRICT KARIMNAGAR.—The treasure-trove consists of five half-pagodas of the period of Achyuta Raya and a gold disc with a hole.

4. YADAVA COIN AND ORNAMENTS, BOPPAPPOR, DISTRICT KARIMNAGAR.—A gold coin of the Yadava dynasty and seven ornaments comprise the treasure-trove.

5. VIJAYANAGARA COIN, KANNOOR, DISTRICT KARIMNAGAR.—A gold coin of the time of Pratapa Krishna Raya was found.

6. VIJAYANAGARA COINS, KOHEDA, DISTRICT KARIMNAGAR.—Two gold coins, one each of Pratapa Krishna Raya and Achyuta Raya, were discovered.

7. LATE MUGHAL COINS, MIRZAPUR, DISTRICT KURNOOL.—The treasure-trove consists of twenty-one rupees and sixteen half-rupees of the period of the late Mughal emperors. The coins are under study.

8. GOLD COINS, AMARABAD, DISTRICT MAHBUBNAGAR.—The gold coin with two holes bears Western Chalukyan symbols.

9. MUGHAL COINS, MARIYAL, DISTRICT NALGONDA.—The treasure-trove of thirty-one silver coins including an one-eighth rupee is under study.

[1] Information from: 1-12, the Director of Archaeology and Museums, Andhra Pradesh State, who acquired all these treasure-troves for the State Museum; 13-15 and 17-19, the Director of Archaeology, Gujarat State; 16, the Superintending Archaeologist, Western Circle of the Survey (discovered by Shri K. P. Gupta and Shri N. M. Ganam of that Circle); 20, the Director of Libraries and Archives, Jammu and Kashmir State; 21, the Director of Archaeology, Kerala State; 22-24, the Director of Archaeology and Museums, Madhya Pradesh State; 25, Shri V. S. Wakankar, Vikram University, Ujjain; 26, 28-32 and 34-42, the Director of Archives and Archaeology, Maharashtra State, who received the treasure-troves; 27 and 33, the Curator, Central Museum, Nagpur; 43-47, the Director of Archaeology, Mysore State; 48, the Curator, Rajputana Museum, Ajmer and the Director of Archaeology and Museums, Rajasthan State; 49-52 and 54-61, the Director of Archaeology and Museums, Rajasthan State; 53, Shri Devendra Handa, Lecturer, Basic Teachers' Training College, Sardarshahr (Rajasthan); 62, 64 and 65, Professor K. D. Bajpai, University of Sagar; and 63 and 66, the Deputy Secretary, Uttar Pradesh State.

10. MISCELLANEOUS COINS, KANDALAPADU, DISTRICT NELLORE.—Four gold coins of the Tughlaq dynasty and two hundred and eighty-three south Indian *fanams* were found as a treasure-trove. They are under study.

11. BAHMANI COINS, KODAPGAL, DISTRICT NIZAMABAD.—Twenty silver coins of the Bahmani dynasty comprise the treasure-trove.

12. GOLD ORNAMENTS, SHAYAMPET HAVELI, DISTRICT WARANGAL.—The treasure-trove consists of sixty-eight gold ornaments.

GUJARAT

13. MISCELLANEOUS SCULPTURES, AHMADABAD.—Twelve pieces of sculptures, recovered from the city, have now been kept in the Municipal Corporation Office for their safe custody.

14. KSHATRAPA COINS, LATHI, DISTRICT AMRELI.—Nine silver coins of Svami Rudrasena III were discovered.

15. BRONZE IMAGES AND VESSELS, MEMDAVAD, DISTRICT BANASKANTHA.—Three Jaina images and some small vessels were recovered.

16. MEDIEVAL COPPER COINS, KHAROLI AND SELOT, DISTRICT BROACH.—Copper coins of Ahmad Shah I were collected.

17. JAINA IMAGES, VASAI, DISTRICT MEHSANA.—Ten pieces of Jaina images are in the process of acquisition.

18. INDO-MUSLIM COPPER COINS, LIMKHEDA, DISTRICT PANCHMAHALS.—Three Indo-Muslim copper coins were collected. They are yet to be deciphered.

19. MISCELLANEOUS COINS, PIPARDI, DISTRICT RAJKOT.—Of the coins found in this village, one hundred and ninety-four pertain to the British regime. The remaining thirty-six, of silver, are yet to be deciphered. They are in the process of acquisition.

JAMMU AND KASHMIR

20. MISCELLANEOUS COPPER COINS, GANTAMULLA, DISTRICT BARAMULLA.—Forty-three copper coins, discovered in this village, include issues of the Huna chief Toramana and the Kashmiri rulers Didda and Harsha.

KERALA

21. FANAMS, NAYARAMBALAM, DISTRICT ERNAKULAM.—The collections of the Archaeological Museum, Trichur, were enriched by the acquisition of a treasure-trove of two hundred and four Virarayan *fanams*.

MADHYA PRADESH

22. KALACHURI COINS, KHUDIMUDI, DISTRICT DURG.—Several Kalachuri coins with the name of the king Ratnadeva on the obverse and animal motif on the reverse were reported to have been found in the village. The report is yet to be confirmed.

23. INDO-MUSLIM COINS, KANWARA, DISTRICT JABALPUR.—Thirty-one Indo-Muslim silver coins were found in a pot by a cultivator while digging his field. According to Dr. Z. A. Desai, Superintending Epigraphist for Arabic and Persian Inscriptions of the Survey, who deciphered the coins, one, dated A.H. 948 and minted at Jahanpanah, is an issue of Sher Shah Sur, twenty-four, ranging in dates from A.H. 953 to 960, of Islam Shah, five, ranging in dates between 965 and 968, of Bahadur Shah of Bengal and one, dated A.H. 981 (or 984) and minted at Tanda, of Da'ud Shah Karrani of Bengal.

24. GUPTA COINS, ANUPPUR AND BELDI, DISTRICT SHAHDOL.—Two gold coins, one from Anup-pur and the other from Beldi, have been deposited in the Ghasidas Memorial Museum, Raipur. They are ascribed to the Gupta emperor Chandragupta II.

25. GUPTA COINS, UJJAIN.—Shri Narayan Bhati, Department of Archaeology, Vikram University, Ujjain, discovered a bronze coin at Gadhkalika (Ujjain). As deciphered by Shri V. S. Wakankar, the coin is an issue of Chandragupta II. On the obverse is the figure of Chandragupta as an archer with the legend *Chandra,* while on the reverse is the seated figure of Lakshmi with the legend *Sri-Vikramah.* The coin is now in the museum of the Vikram University.

MAHARASHTRA

26. MUGHAL COINS, BATWADI, DISTRICT AKOLA.—A large number of Mughal *fulus,* weighing 28·950 gms., were discovered in a *gadhi.* They are of the Elichpur mint.

27. BAHMANI COINS, DAHIHANDA, DISTRICT AKOLA.—The Central Museum, Nagpur, received a treasure-trove of about seventy-seven thousand six hundred and eighty Bahmani copper coins.

28. QUTB-SHAHI COINS, KARLI, DISTRICT AKOLA.—A treasure-trove of two hundred and five copper coins of Abdullah Qutb-Shah was found in the village.

29. COPPER COINS, YERANDA, DISTRICT AKOLA.—Three hundred and two copper coins were discovered while digging a burial-pit at the cremation-ground. The coins are yet to be deciphered.

30. MUGHAL COINS, RUI NALKOLE, DISTRICT BHIR.—Two hundred and ten silver issues of the Mughal rulers were found in course of digging in a *matha.*

31. BRITISH COINS, BAWANPIR, DISTRICT BULDANA.—One hundred and eight British rupees were encountered in the course of digging.

32. BRITISH COINS, JAMOD, DISTRICT BULDANA.—Four hundred and seventy-two silver coins of the British emperors were found as a treasure-trove.

33. KSHATRAPA COINS, MALKAPUR, DISTRICT BULDANA.—A treasure-trove of thirty-six silver coins of the Kshatrapa rulers was reported.

34. MUGHAL COINS, MALKAPUR, DISTRICT BULDANA.—Forty-four silver coins of the Mughal emperors Shah Jahan and Aurangzeb were discovered while digging a burial-pit on the bank of the Nalganga.

35. MUGHAL COINS, AHERI, DISTRICT CHANDA.—One hundred and fifty-six silver coins were encountered in course of ploughing operations. They are issues of Shah Jahan, Aurangzeb, Shah Alam Bahadur, Farrukhsiyar and Muhammad Shah.

36. BAHMANI COINS, GUNJALA, DISTRICT CHANDA.—A large number of copper coins, weighing 25 kg., were encountered while digging roots of *Palas* trees in a field. They are issues of the Bahmani ruler Humayun Shah.

37. MUGHAL COINS, DHARANGAON, DISTRICT JALGAON.—Two silver coins of Aurangzeb of the Surat mint were discovered in the village.

38. MUGHAL COINS, NAGPUR.—Three hundred and twenty silver coins of the Mughal ruler Ahmad Shah Bahadur were found while digging for the foundation of a building at Patharve Mohalla of the town.

39. BAHMANI COINS, PERENDA, DISTRICT OSMANABAD.—One hundred and ninety-five copper coins of the Bahmani rulers were discovered in the village.

40. GOLD FERRULES, VALASANG, DISTRICT SHOLAPUR.—A treasure-trove of five gold ferrules was discovered while digging for a tank.

41. MUGHAL COINS, GIRAD, DISTRICT WARDHA.—Thirty-four silver coins of the Mughal emperor Aurangzeb were found while digging in a field.

42. QUTB-SHAHI COINS, PAUNAR, DISTRICT WARDHA.—Eighteen copper coins of the Qutb-Shahi ruler Abdullah Qutb-Shah were encountered while digging earth for the construction of a dam.

MYSORE

43. PADAKAS, HAKANDI, DISTRICT BELLARY.—Eleven *padakas*, pertaining to a treasure-trove, were found to have been embossed with figures, mostly of horse-riders.

44. INDO-MUSLIM COINS, HAMPI, DISTRICT BELLARY.—The hoard of two hundred fifty copper coins, of thick fabric, was found, on study, to bear the legend 'Alau'ddin Khalji Moghali Khandan'.

45. GOLD COINS, KAMPLI, DISTRICT BELLARY.—Of the twenty-five gold coins, dis-

covered as a treasure-trove, two are of the 'Uma-Mahesvara' type of Vijayanagara. The rest, which bear Persian legends on both sides, belong to the Mughal period.

46. GOLD COINS, ALIYABAD, DISTRICT BIJAPUR.—A large gold coin with Persian legends on both sides was reported as a treasure-trove.

47. GOLD COINS, KUSHTAGI, DISTRICT RAICHUR.—A treasure-trove of fourteen coins of the Vijayanagara period and thirty-four gold discs, meant for die-striking, was found. Thirteen of the coins are of the 'Lakshmi-Narayana' type and bear the name of Deva Raya. The remaining coin, of the 'Gandabherunda' type, is an issue of Achyuta Raya.

RAJASTHAN

48. MISCELLANEOUS COINS, RAJPUTANA MUSEUM, AJMER.—Forty-six complete and five pieces of billion coins of the Chauhan rulers from Ajmer area were acquired through the Collector, Ajmer. The Museum also received a silver punch-marked coin and nine *gadhaia* coins which were purchased from a Sarraf of Ajmer.

49. MUGHAL COINS, SAGROD, DISTRICT BANSWARA.—A treasure-trove of eight hundred and fifty-nine copper coins of Mughal rulers was found by Shri Laling while digging for the foundation of a house in the village.

50. MISCELLANEOUS COINS, NOH, DISTRICT BHARATPUR.—The coins found in the excavations at Noh are under study. The collection includes silver and copper punch-marked coins, copper uninscribed cast coins and coins of the Yaudheyas, Varunamitra and Virasena.

51. GADHAIA COINS, DIATRA, DISTRICT BIKANER.—Twenty-three silver *gadhaia* coins were acquired under the Treasure-Trove Act.

52. MUGHAL COINS, BHADASAR, DISTRICT CHURU.—A treasure-trove of sixty-four silver coins of the Mughal ruler Muhammad Shah was discovered by Shri Hanumana Ram of the village.

53. INDO-MUSLIM COINS, PHOGAN, DISTRICT CHURU.—Copper coins belonging to Ghiyathud-Din Balban, Alaud-Din Khalji, Qutbud-Din Mubarak Shah I and Ghiyath-ud-Din Tughluq were found in the village.

54. SILVER COINS, KATISOR, DISTRICT DUNGARPUR.—A treasure-trove of thirty silver coins was acquired.

55. SILVER COINS, PACHALASA, DISTRICT DUNGARPUR.—Twelve silver coins were acquired as a treasure-trove.

56. SILVER COINS, PUNJPUR, DISTRICT DUNGARPUR.—Twenty-two silver coins of the late medieval period were acquired under the Treasure-Trove Act.

57. MISCELLANEOUS COINS, PALLU, DISTRICT GANGANAGAR.—As many as two hundred and fourteen coins were acquired from this village. The collection includes a silver *gadhaia* coin, six silver coins of Ajayadeva, a silver coin of the 'Horseman and bull' type, a copper 'Adivaraha' *dramma,* thirty copper coins of the 'Horseman and bull' type, a copper coin of Balban with the legend in Nagari characters, five copper coins of Alaud-Din Khalji, a copper coin of Nusrat Shah minted in Delhi, a copper coin of Firuz Shah Tughluq, a copper coin of Ibrahim Shah, four copper dumpy pieces and two copper Bikaneri paise.

58. SILVER COINS, DUNGARGAON, DISTRICT JHALAWAR.—The Revenue authorities of the district reported the discovery of a treasure-trove of seventy-four silver coins from the village.

59. SILVER COINS, KALUKHERA, DISTRICT JHALAWAR.—A treasure-trove of twenty-eight silver coins was reported by the Revenue authorities.

60. MISCELLANEOUS COINS, PHALAUDI, DISTRICT JODHPUR.—Ninety-nine coins were acquired from Shri Milap Chand Kanungo of Phalaudi. Eighty-six of them are the issues of the Arab Governors of Sindh. These tiny coins bear Arabic Kalima on one side and names of the Governors in Arabic on the other. Among the rest, four are silver Indo-Sassanian coins of the flat fabric, one copper *fulus,* two copper coins of Firuz Shah Tughluq, five copper coins of the former Bahawalpur State and one copper Jodhpuri paisa.

61. COPPER COINS, NIMODA, DISTRICT KOTA.—The Police Department of the district reported the find of copper coins, weighing 1 kg. 100 gm. The details are yet to be found out.

UTTAR PRADESH

62. COINS, AHICHCHHATRA, DISTRICT BAREILLY.—Of the three coins, two are circular copper coins and are the issues of king Achyuta of Panchala with his head depicted; the third coin bears the legend *Yajnapalasa.* This is the second, so far known, coin of Yajnapala.

63. MISCELLANEOUS COINS, SHAHABAD, DISTRICT HARDOI.—A large number of Indo-Muslim coins and some issues of early Hindu dynasties were noticed at the place.

64. DIE-STRUCK COINS, HASTINAPUR, DISTRICT MEERUT.—Five copper coins with criss-cross pattern were discovered.

65. COPPER COIN, CHANDAUSI, DISTRICT MORADABAD.—A circular copper coin with the legend *Sri Maharaja Harigupta* in characters of the late fourth or early fifth century A.D. was collected.

66. MISCELLANEOUS COINS, MANWANDIN, DISTRICT SITAPUR.—Twenty-three coins, one of silver and the rest of copper, were found in different layers of a trial-trench laid at this place. The coins are under study. Some of them appear to be issues of the Kushan kings, while one that of a king with the name-ending *mitra.*

IV. OTHER IMPORTANT DISCOVERIES

ANDHRA PRADESH

1. RELIC-CASKETS, GUNTUPALLI, DISTRICT WEST GODAVARI.—During clearance-work of the Buddhist remains at Guntupalli, Shri M. N. Prasada Rao of the South-eastern Circle of the Survey discovered a copper casket inside the votive *stupa* no. 4. The casket in its turn contained two more caskets, one of silver and the other seemingly of gold. The last, which was inside the silver one, yielded beads of bone and crystal.

Two metallic discs, presumably forming part of a casket, were recovered from votive *stupa* no. 3.

BIHAR

2. BUDDHIST SEALING, BIHAR SHARIF, DISTRICT PATNA. — The Superintending Archaeologist of the Mid-eastern Circle of the Survey reported the discovery of a terracotta sealing with a figure of Buddha in *bhumi-sparsa-mudra* and the Buddhist creed.

3. IMAGE OF SURYA, BAGAURA, DISTRICT SARAN.—Shri B. N. Prasad of the Mid-eastern Circle of the Survey noticed a black stone image of standing Surya, ascribable to about the eleventh-twelfth century A.D.

4. BRICK TEMPLE, BANGRA, DISTRICT SARAN.—A brick temple was noticed by Shri B. N. Prasad in Tola Ramchandrapur of the village. Locally known as Panchmandir, the temple, of about the sixteenth century A.D., bears mural paintings and carved designs.

5. IMAGE OF KRISHNA, MAHARAJGANJ, DISTRICT SARAN.—Shri B. N. Prasad discovered a black stone image of Krishna upholding the Govardhana hill. The image is assignable to the twelfth-thirteenth century A.D.

DELHI

6. PAINTED GREY WARE SITE, KHERA KALAN, DELHI.—A Painted Grey Ware site on the right bank of the Yamuna was discovered by Shri K. N. Dikshit of the North-western Circle of the Survey.

HARYANA

7. HARAPPAN SITE, PAULI, DISTRICT JIND.—A mound yielding the typically-Harappan finds including painted pottery and terracotta triangular cakes, besides copper rings reminiscent of the Copper Hoard Culture, was located at Pauli by Acharya Bhagwan Dev of Gurukul Jhajjar.

8. PAINTED GREY WARE SITE, TOPRA KALAN, DISTRICT KARNAL.—Shri H. K. Narain of the North-western Circle of the Survey located a Painted Grey Ware site

at Topra Kalan which is generally identified with the original venue of the Asokan pillar removed to Kotla Firuz Shah in Delhi by Firuz Shah Tughluq in the second half of the fourteenth century A.D.

KERALA

9. URN-BURIAL SITE, NADUVATTOM DOSAM, PATTAMBI, DISTRICT PALGHAT.—Burial-jars and circular pits were discovered by the Director of Archaeology, Kerala State.

10. URN-BURIAL SITE, ANGANDIYUR, DISTRICT TRICHUR.—Burial jars of the pyriform type, exposed in the area during heavy rains, were collected and housed in the Trichur Archaeological Museum. These jars, according to the Director of Archaeology, Kerala State, have an out-turned externally collared rim, a convex shoulder with a double row of finger-tip design and a globular profile tapering to a truncated round base.

MADHYA PRADESH

11. CHALCOLITHIC SITE, NEPAWALI, DISTRICT DHAR.—Shri V. S. Wakankar, Vikram University, Ujjain, found sherds of the Kayatha ware in the village.

12. STONE AGE TOOLS, DISTRICT JABALPUR.—Shri V. K. Tiwari of the Central Circle of the Survey discovered tools belonging to the Middle Stone Age at Bhadora, Chapna, Darori, Deori, Doli, Khareta, Piparia, Sakri Garha, Salaia, Vilayat Kalan and Vilayat Khurd. Early Stone Age tools, consisting of handaxes, choppers and scrapers, were also noticed by him, though in a restricted number, at Doli, Piparia and Salaia, all in the valley of the Chhoti Mahanadi in Tehsil Murwara. Tools are found in rolled condition.

13. GUPTA TEMPLE, MARHIA, DEORI KALAN, DISTRICT JABALPUR.—A flat-roofed stone temple, assignable to the middle of the fifth century A.D., was discovered at Marhia by Shri Niraj Jain and Professor K. D. Bajpai. At the base of the door-jambs are *dvarapalas,* while at the centre of the lintel is a figure of Garuda with outstretched wings.

14. STONE AGE TOOLS, JAWAD, DISTRICT MANDASOR.—Shri V. S. Wakankar discovered pebble-tools and Acheulian tools in the neighbourhood of Jawad on the banks of the Gambhiri and its tributary *nala.*

15. IMAGE OF BUDDHA, ARANG, DISTRICT RAIPUR.—Professor K. D. Bajpai discovered a stone image of Buddha, seated in *bhumi-sparsa-mudra,* ascribable to about the end of the eighth century A.D.

16. CAPITAL AND SCULPTURES, FIROZPUR, DISTRICT RAISEN.—A four-sided capital decorated with standing *naga*-figures, a *makara-mukha* and *naga* and *nagi*-figures was collected by the Directorate of Archaeology and Museums, Madhya Pradesh State.

17. NAGA AND NAGI FIGURES, GULGAON, DISTRICT RAISEN.—The Deputy Director of Archaeology and Museums, Madhya Pradesh State, reported the discovery of rare figures of *nagas* and *nagis* bearing affiliations to the *Yaksha*-figures of the Sunga period.

18. ROCK-SHELTERS, LAKHA JUAR AND PANDUNAGAR, DISTRICT RAISEN.—Shri V. S. Wakankar discovered fifteen painted rock-shelters in the Pandunagar area near Bhimbetka. Similar shelters and caves were also noticed by him 3 km. westward at Lakha Juar. Most of the earlier paintings in these shelters are in red ochre, while the later ones, of the historical period, are in white. The themes of paintings centre round wild life, hunting scenes, ceremonial dancing and individual animal figures like deer, tigers, elephants, bisons, rhinoceros and wild buffaloes.

19. ROCK-SHELTERS, SANCHI, DISTRICT RAISEN.—Six painted rock-shelters were noticed by Shri V. S. Wakankar at the eastern escarpment of the Sanchi hill.

20. CHALCOLITHIC SITES, MEEN AND RUNIJA, DISTRICT RATLAM.—Shri V. S. Wakankar discovered sherds of the Kayatha ware in these villages.

21. EARLY STONE AGE TOOLS, MALTHONE, DISTRICT SAGAR.—Tools, made of quartzite, were discovered by Shri C. B. Trivedi of the Central Circle of the Survey.

22. BRAHMANICAL AND JAINA SCULPTURES, RAHATGARH, DISTRICT SAGAR.—Shri C. B. Trivedi noticed several loose sculptures of the Brahmanical and Jaina pantheon by the side of a dilapidated temple of Śiva on the bank of the Bina. The vestiges belong to the twelfth-thirteenth century A.D.

23. SAPTA-MATRIKA PANEL, ASTA, DISTRICT SEHORE.—A rare panel of Sapta-matrikas was recovered from the temple-site at Asta by the Directorate of Archaeology and Museums, Madhya Pradesh State.

24. IMAGE OF KARTTIKEYA, AMARKANTAK, DISTRICT SHAHDOL.—An image of Karttikeya with his mount peacock of the late Gupta period was noticed by Professor K. D. Bajpai.

25. MUGHAL SEAL, ORCHHA, DISTRICT TIKAMGARH.—The Directorate of Archaeology and Museums, Madhya Pradesh State, reported the discovery of an iron cylindrical seal found during clearance of débris in the Raj-Mahal of Orchha. The seal with an inscription on one end refers to the Mughal Emperor Akbar.

26. CHALCOLITHIC SITES, DISTRICT UJJAIN.—Shri V. S. Wakankar discovered sherds of the Kayatha ware at Dhanasuta, Dhangawada, Khacharoda and Maksi.

27. LIONESS-HEAD, UJJAIN.—A sandstone head of a lioness, resembling Graeco-Roman lioness-figures was discovered by Shri V. S. Wakankar in the Bahadurganj area of the Ujjain town.

28. SCULPTURED COLUMN, UJJAIN.—Shri C. Krishna, Deputy Director of Archaeology and Museums, Madhya Pradesh State, noticed a rare four-sided column depicting different aspects of Balarama. At present it rests in the Hanuman temple of the Garhkalika area of the town.

29. SHERDS OF GREY WARE AND PAINTED N.B.P. WARE, UJJAIN.—Shri V. S. Wakan-

kar picked up several sherds of grey ware and the painted N.B.P. Ware from a trench dug for a water-pipe line in the Sandipani area of the town.

30. GUPTA SCULPTURES, DURJANPUR, DISTRICT VIDISHA.—The Directorate of Archaeology and Museums, Madhya Pradesh State, reported the discovery of Jaina images by a cultivator during ploughing operations at the ancient site of Durjanpur near Vidisha. They are now housed in the Vidisha State Museum. Two of the images bear on their pedestals inscriptions, which, on decipherment by the Chief Epigraphist of the Survey, reveal the dedications of images of Chandraprabha (pl. LIV A) and Pushpadanta (pl. LIV B) by Maharajadhiraja Ramagupta (see p. 46).

31. STONE AGE TOOLS, PATHARI, DISTRICT VIDISHA.—Shri C. B. Trivedi discovered tools of the Early, Middle and Late Stone Ages. Late Stone Age tools were found mostly on the hillocks.

32. PEBBLE-TOOLS, RAMGAD, DISTRICT WEST NIMAR.—Several pebble-tools were noticed on the northern bank of the Narmada by Shri V. S. Wakankar.

MYSORE

33. NEOLITHIC AND MEGALITHIC SITES, DISTRICT BELGAUM.—Neolithic grey ware of the Maski fabric, parallel-sided blades of chert and the Megalithic Black-and-Red Ware were found by Shri A. Sundara of the South-western Circle of the Survey at Kallur, Kithur and Maradigi. Megalithic monuments of the passage-grave type were also located by him at Hattargi and Hunur.

34. EARLY STONE AGE TOOLS AND MEGALITHS, SAUNDATTI, DISTRICT BELGAUM.—Shri A. Sundara discovered Early Stone Age tools including an ovate and a handaxe. Megalithic cist-tombs with a passage similar to those from Hattargi and Hunur were also noticed by him on the top of the sandstone hill known as Yellammagudda.

35. CHALUKYAN TEMPLES, KURALGERA, DISTRICT GULBARGA.—The Director of Archaeology, Mysore State, noticed at this place several monuments at various stages of decay. The most important among them is the Siva temple called Bhutanagudi which has beautiful sculptures on its walls. Another important temple of the place is again a Siva shrine which is completely covered by later structures. A typical Chalukyan monument, the temple presents slim pillars and variously-designed perforated screens.

36. MIDDLE STONE AGE TOOLS, HISTORICAL POTTERY AND TEMPLES, MALKHED, DISTRICT GULBARGA.—Shri A. Sundara discovered hollow scrapers and side-scrapers, made on jasper, on the banks of the Kagine. The site also yielded the Red Polished Ware and red ware assignable to the first-fourth centuries A.D. Remains of temples of the Rashtrakuta period were also found.

37. VIRAGALS, HEMMARAGALLI, DISTRICT MYSORE.—A group of beautiful *viragals* was discovered by the Director of Archaeology, Mysore State. Stylistically, they are assignable to about the fourteenth century A.D.

38. CHALUKYAN TEMPLE, DHARESVARA, DISTRICT NORTH KANARA.—The Director of Archaeology, Mysore State, noticed a fine Chalukyan temple with its beautiful door-

way and well-worked pillars. The temple, known as Panchikesvara, belongs to about the tenth century A.D.

39. NEOLITHIC AND MEGALITHIC SITES, DISTRICT RAICHUR.—Shri A. Sundara discovered Neolithic grey ware of the Maski fabric, parallel-sided blades of chert and the Megalithic Black-and-Red Ware at Kopbal. At Malkhed a few fragmentary polished stone axes and Neolithic grey ware were found.

40. ROCK-SHELTERS, HIRE-BENKAL, DISTRICT RAICHUR.—More rock-shelters with paintings were discovered by Shri A. Sundara at Hire-Benkal wherefrom some rock-shelters were reported earlier (*1967-68*, p. 67). One of the largest paintings, now discovered, depicts a large number of horse-riders, men dancing in groups, animal figures like bulls, antelopes and peacocks. Rock-shelter no. 2, which is also painted, yielded a fluted core of chert and a sherd of a platter of the Neolithic grey ware painted in red ochre on the rim. Sherds of the Neolithic grey ware and Megalithic Black-and-Red Ware were found in Rock-shelter no. 6.

ORISSA

41. FORTIFIED SITE, KHARLIGARH, DISTRICT BOLANGIR.—Shri S. K. Mukherji of the Eastern Circle of the Survey discovered an early historical fortified site near the confluence of the Tel and the Rahul, 48 km. south-east of Bolangir town. The surface-finds include sherds of coarse red ware of the Sisupalgarh type and black-and-red ware. The find of microlithic flakes and cores may indicate an earlier background for the fortified mound.

42. FORTIFIED SITE, ASURGAD, DISTRICT PHULBANI.—An early historical fortified site was also discovered by Shri S. K. Mukherji near the confluence of the Tel and the Mahanadi, 4 km. from Sonepur town. The front side of the site has a wall pierced by gateways, while the remaining sides are guarded by the rivers. The surface-finds are similar to those from Kharligarh.

PUNJAB

43. PAINTED GREY WARE SITE, KAULI, DISTRICT PATIALA.—A Painted Grey Ware site was located in the village by Shri H. K. Narain of the North-western Circle of the Survey.

44. PAINTED GREY WARE SITE, MOONAK, DISTRICT SANGRUR.—Shri Devendra Handa, Lecturer, Basic Teachers' Training College, Sardarshahr (Rajasthan), discovered sherds at Moonak (Akalgarh), sited on the right bank of the Ghaggar.

RAJASTHAN

45. IMAGE OF MAHISHASURAMARDINI, KISHANGARH, DISTRICT AJMER.—A profusely-ornamented image of Mahishasuramardini, locally known as Sitala-mata, was reported by Shri O. P. Sharma, Curator, Rajputana Museum, Ajmer. Stylistically, it is ascribable to about the eleventh-twelfth century A.D.

46. VAISHNAVA TEMPLE, RENI, DISTRICT ALWAR.—A Vaishnava temple, known as Kalyan Rai Mandir, was noticed by the Curator, Government Museum, Bharatpur. A good example of the Rajput style of temple-architecture of the seventeenth century, the temple presents on the doorway of the main sanctum an interesting representation of Dhola Maru. The frieze is dated V.S. 1652.

47. TEMPLES, DEOKA, DISTRICT BARMER.—Two temples of about the eleventh century A.D. were noticed by the Director of Archaeology and Museums, Rajasthan State, at Deoka on the Barmer Road. They were probably dedicated to Surya and Siva.

48. BUST OF SURA-SUNDARI, KIRADU, DISTRICT BARMER.—The bust of a *sura-sundari* was collected by the Directorate of Archaeology and Museums, Rajasthan State.

49. COPPER CELTS, SABANIA, DISTRICT BIKANER.—Shri Devendra Handa reported the discovery of two flat copper celts, 23 × 9 cm. each, with concave sides and splayed-out cutting edges, weighing 1350 and 1550 gms. The farmer, who had found the celts while ploughing his field at Sabania, sold them to an antiquity-dealer of Sardarshahr. The latter, in his turn, sold them to the Gurukul Museum, Jhajjar.

50. IMAGE OF SURYA, BILOT, DISTRICT CHITORGARH.—The Director of Archaeology and Museums, Rajasthan State, recovered an image of Surya, assignable to the eleventh century A.D.

51. MISCELLANEOUS OBJECTS, JIWANDESAR, DISTRICT CHURU.—Shri Devendra Handa found sherds of coarse grey and black-painted red wares of the medieval period and a late medieval marble image of the Jaina Sasanadevi Amba in the village. He also reported the discovery of three inscriptions, written in Nagari characters and dated V.S. 1559, 1662 and 1724, at the place.

52. MISCELLANEOUS OBJECTS, PHOGAN, DISTRICT CHURU.—Sherds of coarse grey and black-painted red wares of the medieval period, Indo-Muslim coins (p. 62) and an incomplete *sati*-stone inscription dated V.S. 1723 were noticed also by Shri Devendra Handa.

53. IMAGE OF KUBERA, GHATIALA, DISTRICT JODHPUR.—The Directorate of Archaeology and Museums, Rajasthan State, collected an image of Kubera from this place.

54. IMAGE OF SURYA, BADI KHATU, DISTRICT NAGAUR.—An image of Surya was collected by the Directorate of Archaeology and Museums, Rajasthan State.

55. STEPPED-WELL, CHHOTI KHATU, DISTRICT NAGAUR.—The Director of Archaeology and Museums, Rajasthan State, reported the discovery of a stepped-well of about the ninth century A.D. There are several sculptures attached to its side walls. The well contains two inscriptions, as noticed by Shri N. M. Ganam, Technical Assistant of the Western Circle of the Survey. One of the inscriptions, as deciphered by the Chief Epigraphist of the Survey, appears to record the excavation of the stepped-well in *Marubhumi.* The inscription is in characters of about the ninth century A.D.

56. MEDIEVAL SCULPTURES, CHHOTI KHATU, DISTRICT NAGAUR.—Shri N. M. Ganam discovered several medieval sculptures representing Surya (pl. LV A), Karttikeya (pl. LV B), Kubera and Ganesa in the Saiva Math, not very far from the stepped-well noted above.

57. MEDIEVAL MOUND, NARLAI, DISTRICT PALI.—The Director of Archaeology and Museums, Rajasthan State, discovered a mound of the medieval period.

58. IMAGE OF NARASIMHA, MT. ABU, DISTRICT SIROHI.—An image of Narasimha was obtained by the Directorate of Archaeology and Museums, Rajasthan State.

59. STEPPED WELL, POSITARA, DISTRICT SIROHI.—The Director of Archaeology and Museums, Rajasthan State, reported the discovery of a stepped well near the village. In the niches of the well were found images of Lakshmi, Durga, Ganesa, Vishnu and Uma-Mahesvāra.

UTTAR PRADESH

60. IMAGE OF MAHISHASURAMARDINI, KANNAUJ, DISTRICT FARRUKHABAD.—Shri L. M. Wahal of the Northern Circle of the Survey noticed an image of Mahishasuramardini of the Kushan period.

61. NORTHERN BLACK POLISHED WARE AND A TERRACOTTA IMAGE, AMINI, DISTRICT FATEHPUR.—During the course of his exploration Shri L. M. Wahal obtained sherds of the N.B.P. Ware and a terracotta image of the Gupta period.

62. BRAHMANICAL IMAGES, MAINPURI.—Images of Uma-Mahesvara, Vishnu, Surya and Ganesa of the medieval period were also noticed by Shri L. M. Wahal in the Devi temple at Mainpuri.

63. HARAPPAN SITE, BHURA, DISTRICT MUZAFFARNAGAR.—Shri K. N. Dikshit of the North-western Circle of the Survey discovered an ancient mound on the Katha Nala, a tributary of the Yamuna in Tehsil Kairana. The site yielded, apart from the typically Harappan pottery, Painted Grey Ware and sherds of the red ware of the Sunga-Kushan period.

V. RADIOCARBON DATES[1]

The radiocarbon dates[2], presented statewise below, were measured by the Tata Institute of Fundamental Research, Bombay, during 1968-69. For converting the dates to B.C./A.D. scale, 1950 has been taken as the reference year; the dates are based on the radiocarbon half-life value of 5730 years.

GUJARAT

1. BARDIA HILL, DISTRICT PORBANDAR

(i) TF-764 (a). Miliolite limestone. 18435 ± 445 (16485 B.C.)
Whole sample dated after washing repeatedly with 1 normal HCl.
(ii) TF-764 (b). Miliolite limestone. 13370 ± 190 (11420 B.C.).
Oolite grains between 150 and 420 microns; washed repeatedly with 1 normal HCl.
Stratigraphic relationship between (a) and (b) not given.

2. WASHTANA, DISTRICT KUTCH

TF-889. Miliolite limestone. 11450 ± 155 (9500 B.C.)
Oolite grains between 150 and 420 microns; washed repeatedly with 1 normal HCl; from surface exposure; Field no. 11/132.

3. KATRAL HILL, DISTRICT KUTCH

(i) TF-892. Miliolite limestone. 33480 $^{+2790}_{-2085}$ (31520 B.C.)
Oolite grains between 180 and 400 microns; washed repeatedly with 1 normal HCl. Depth 7.6 m. from the surface; from an exposed section; Field No. 11/92.
Comment: 2 standard deviation error given.
(ii) TF-893. Miliolite limestone. 29430 $^{+1650}_{-1380}$ (27480 B.C.)
Oolite grains between 180 and 400 microns; washed repeatedly with 1 normal HCl; from a surface exposure; Field No. 11/26.
Comment: 2 standard deviation error given.

4. DHRUBYA HILL, DISTRICT KUTCH.

TF-897. Miliolite limestone. 12640 ± 170 (10690 B.C.)
Oolite grains between 180 and 400 microns; washed repeatedly with 1 normal HCl; surface exposure; Field no. 11/78.

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[1] Contributed by Dr. D. P. Agrawal, Shri S. K. Gupta and Kum. Sheela Kusumgar.

[2] Samples submitted: 1 and 9, by the Deccan College Postgraduate and Research Institute, Poona; 2-6, by Oil and Natural Gas Commission, Baroda; 7,12 and 15 by the Geological Survey of India; 8, by the Tata Institute of Fundamental Research, Bombay; 10, by the Indian Institute of Technology, Bombay; 11, by the University of Nagpur, Nagpur; 13, by the Birbal Sahni Institute of Palaeobotany, Lucknow; 14, by the Archaeological Survey of India, New Delhi. Further details of the samples can be had from the submitting organizations.

5. JURA HILL, DISTRICT KUTCH

TF-898. Miliolite limestone. $25480 \pm ^{1025}_{915}$ (23530 B.C.)

Oolite grains between 180 and 400 microns; washed repeatedly with normal HCl; surface exposure; Field no. 11/61.

Comment: 2 standard deviation error given.

6. KHADIR, DISTRICT KUTCH

TF-837 (B). Pleistocene. >37000

Oyster shells representing the raised beach of sub-recent times. From approx. 3 m. above MSL.

7. MALIA, DISTRICT KUTCH

(i) TF-807 (a). Late Pleistocene. 14035 ± 205 (12085 B.C.)

Shells from bore-hole 6, depth 19 m. below MSL; from top of the 85 cm. thick bed; Field no. 7.

(ii) TF-807 (b). Late Pleistocene. 16460 ± 255 (14510 B.C.)

Shells from bore-hole 6; depth 19·85 m; bottom of bed; Field no. 7.

(iii) TF-808. Holocene. 590 ± 110 (1360 A.D.)

Shells from the creek cutting between bore-hole and 9 and 10. Sample from 1 and 1·3 m. above MSL were mixed.

8. JHINJUNVADA, DISTRICT KUTCH

TF-915. Holocene. 6835 ± 130 (4885 B.C.)

Shells from a section exposed in a brine well in the Little Rann of Kutch; depth between 5·15 m. and 5·55 m.; Field no. 13.

MADHYA PRADESH

9. KAYATHA, DISTRICT UJJAIN

TF-779. Chalcolithic. 3790 ± 110 (1840 B.C.)

Charcoal; Trench KTH-A, Layer 7; Field no. 693.

MAHARASHTRA

10. PAITHAN, DISTRICT AURANGABAD

TF-891. Late Quarternary. 19025 ± 660 (17075 B.C.)

Fresh water shells from an old flood-plain deposit of the Godavari river; depth 5 m.

11. TAKALGHAT, DISTRICT NAGPUR

TF-783. Paunar I Complex. 2565 ± 105 (615 B.C.)

Charcoal; Trench TKGI, layer 9 (A); depth 4·78 m.; Field no. TKG-215.

MYSORE

12. MANGALORE, DISTRICT SOUTH KANARA

TF-742. Holocene. 1430 ± 120 (A.D. 520)
Shells from bore-hole 69, between depths 27·7 m. and 30·58 m.

TAMIL NADU

13. KAKATHOPE, DISTRICT NILGIRI

TF-695. Late Pleistocene. 15415 $^{+365}_{-350}$ (13465 B.C.)
Organic mud; depth 2·0—2·30 m.; Field no. 4789/3. Comment: 2 standard deviation error given.

14. PAIYAMPALLI, DISTRICT NORTH ARCOT

As the dates show considerable scatter, sample collection under closer supervision may be desirable. Four samples fall in 1100 ± 150 A.D. range, which could indicate disturbances during this period. Further details can be had from the excavator.

(i) TF-823. 2590 ± 105 (640 B.C.)
Charred grains and charcoal pieces from hearth in a pit on Floor-3, sealed by layer 4; locus, PMP-4, Tr. Bl, Qdt. 2; depth 1·7 m.

(ii) TF-824. 810 ± 95 (A.D. 1140)
Charcoal from pit 6 sealed by layer 4; locus, PMP-8, Tr. A2. western half, depth 1·2 m.

(iii) TF-825. 715 ± 100 (A.D. 1235)
Charcoal from pit 1 sealed by layer 5; locus, PMP-8, Tr. A2, western half; depth 0·87 m.

(iv) TF-827. 3675 ± 110 (1725 B.C.)
Charcoal from pit 3, sealed by layer 6A; locus, PMP-8, Tr. A1; depth 2 m.

(v) TF-828. 2160 ± 100 (210 B.C.)
Charcoal from layer 6A ; locus, Tr. Al; depth 1·75 m.

(vi) TF-829. 1015 ± 105 (A.D. 935)
Charcoal from pit 9 sealed by layer 7; locus, PMP-8, Tr. A2; depth 1·30 m.

(vii) TF-832. 795 ± 100 (A.D. 1155)
Charcoal from layer 8; locus, Tr. A1; depth 1·9 m.

UTTAR PRADESH

15. MOOSKHAND, DISTRICT VARANASI

TF-819. (c). River Bank Remains. 350 ± 100 (A.D. 1600)
Carbonized wood; depth, 15·22 m.; Field no. MKD IC.
TF-820 and TF-821 from other locations of the same bank also gave modern ages. Associated remains consist of pottery and iron artifacts.

VI. MUSEUMS

1. ARCHAEOLOGICAL MUSEUM, AHAR.—The Museum was rearranged with a view to showing the evolution of material culture of Ahar, as represented by the finds excavated from the site.

2. MUNICIPAL MUSEUM, ALLAHABAD.—The Museum acquired from different ancient sites of Uttar Pradesh twenty-eight terracottas, eight beads, five coins of Gangeyadeva and five seals and sealings.

Among Sunga terracottas, acquired from Kausambi, mention may be made of: two fragmentary plaques, depicting a winged lion mounted on the back of an elephant on the left and a warrior fighting another winged lion, standing on hind legs on the right; a drunken lady supported by her lover, resembling in theme the famous Bacchanalian sculpture from Mathura; a lady standing holding a child with a scorpion crawling up on her left arm. Among other notable terracottas may be included a large beautiful *naga* head of *circa* third century A.D. from Faridpur, District Bareilly, and a large Kushan head, wearing a royal head-dress, from Kausambi.

The beads acquired by the Museum, exclusively from Kausambi, are of semi-precious stones and comprise miniature representations of bull, elephant, frog, tortoise and birds, etc.

Out of five coins of Gangeyadeva, of base gold, one was acquired from Kausambi and four from Jhusi. A terracotta mould showing obverse and reverse impressions of five cast copper coins, acquired from Kausambi, is a unique find belonging to *circa* second century B.C.

3. ARCHAEOLOGICAL MUSEUM, AMBER.—The Museum was reorganized from the educational point of view. Pottery and terracottas were displayed in a chronological sequence.

4. SHRI BHAVANI MUSEUM AND LIBRARY, AUNDH.—Besides an old manuscript, the Museum acquired an old cannon from village Nimsod and some old swords from village Vadgaon, both situated in District Satara.

5. GOVERNMENT MUSEUM, BANGALORE.—To the Archaeological Section of the Museum, were added a few gold coins, the most noteworthy being those of Samudragupta and Chandragupta II; several sculptures, of which three come from the Buddhist site at Sannathi, dating back to about the first-second centuries A.D., and a few Saptamatrika sculptures of the Nolamba style belonging to about the ninth-tenth centuries A.D. Another important acquisition is a bronze Ganesa with consort from Kerala, belonging to about the fifteenth century.

6. MUSEUM AND PICTURE GALLERY, BARODA.—A phased programme of reorganization of the Archaeology Section has been launched and the display of the stone sculptures has been particularly improved.

Of the several acquisitions made by this Museum during the year, mention may be made of an image of Siva-Parvati (pl. LVI A) belonging to the seventh century from

Gadha, North Gujarat; a schist stone image of Kaumari (pl. LVI B) from Shamlaji and an inscribed brass image of Surya, dated v.s. 1372, from Gujarat.

Out of twenty-six stone sculptures acquired this year, eighteen were received in exchange from the National Museum, New Delhi, significantly adding some good Pallava-Chola and Pala-Sena sculptures to the Museum collection. Other acquisitions included eight bronzes, thirty-eight wood carvings, mostly from Gujarat, and eight terracottas.

7. State Museum, Bharatpur.—Four sculptures and four bronzes from Kaman and five architectural pieces from Pingore were added to the collection. An early medieval door-jamb, carved with floral scroll and river-goddess Ganga, was received as a present from Sri Brijendra Singhji, Maharaja Saheb of Bharatpur.

The Painting Section of the Museum was reorganized and selected Rajasthani miniatures were put on display subject-wise.

All the exhibits of the Archaeological Section have been photographed and the card-index catalogue is under preparation.

8. Orissa State Museum, Bhubaneswar.—The reorganization of the Mining and Geology Gallery was completed and the mining specimens, models and charts displayed scientifically. The reorganized Gallery was inaugurated by the Deputy Chief Minister of Orissa on 17th July, 1968.

The layout plan and estimate for the second room of the Art Gallery was completed. The reorganization will be taken up after collecting the necessary materials.

The Gopabandhu, Madhusudana and Godavarish Gallery of the Art Section was inaugurated by Dr. Triguna Sen, Union Minister of Education, on 31st September, 1968.

The reorganization of the Prehistory Gallery of the Anthropology Section is in progress. There is a proposal to organize a Physical Anthropology Gallery under the Anthropology Section. The Agricultural Gallery has been reorganized on a scientific method and newly acquired agricultural specimens displayed.

The collection of palm-leaf manuscripts is gradually increasing in the Manuscripts Gallery. About four hundred manuscripts were collected during the year and preserved and displayed.

Eight beautiful sculptures of *dikpalas,* acquired by Shri A. Joshi, Superintendent of Museum, have been displayed in the Archaeological Section.

Improvement of the Numismatic and Armoury Gallery is in progress. There are proposals of opening a Bird Gallery, Children's Gallery and a Gallery of Musical instruments.

9. Ganga Golden Jubilee Museum, Bikaner.—The Terracotta Gallery and the Rulers' Gallery were rearranged and cases provided to the Galleries in the upper storey.

10. Archaeological Museum, Bodhgaya.—In co-operation with the Bodhgaya Temple Management Committee, an ambitious scheme was undertaken in 1964 under which the original Sunga railings (pl. LVII) around the Mahabodhi temple were to be removed to the Archaeological Museum, Bodhgaya and cement replicas were to be fixed at the site in their place. Moulds and casts to ten coping stones, fifteen railing pillars and ten cross-bars were prepared during the year. The work is in the final stage

and is likely to be completed soon. The medallions on some of the pillars display beautiful representations of Gaja-Lakshmi, Bodhi tree, boats, lotus plants, Jataka stories, etc.

Apart from the railings, one terracotta tablet, six cast copper coins and ten beads were also acquired by the Museum.

11. PRINCE OF WALES MUSEUM, BOMBAY.—For exhibiting newly-acquired metal sculptures from Shrimati Amaravati Gupta's collection two new show-cases were set up in the Selected Indian Bronze Gallery with proper lighting and pedestals.

Slotted-angle racks were purchased from the grants given by the Government of India for the proper storage of stone sculptures in the Reserve Collection.

Recording of weights of coins in the Reserve Collection is in progress. Valuation of duplicate coins taken out for sale has been completed and the list is being finalized.

Preparation of a catalogue of stone sculptures has been taken up.

12. ASUTOSH MUSEUM OF INDIAN ART, CALCUTTA.—The Museum added, through gift and purchase, about one hundred new acquisitions. Among early objects, datable to prehistoric period, mention may be made of several stone implements from Silavati valley in District Midnapore collected by Shri Sambhunath Ghatak. From the Districts of Bankura, Birbhum and Burdwan were acquired polished stone axes and microliths.

Members of the Museum staff collected important historical antiquities consisting of terracottas, pottery fragments, beads, coins, stone sculptures, etc. Among terracottas a seated Kubera rattle of *circa* second century B.C. from Chandraketugarh, District 24-Parganas, collected by Shri C. R. Roychoudhury, is worthy of notice. Shri Roychoudhury also collected two Archer type gold coins of Samudragupta and Chandragupta II from the vicinity of Chandraketugarh. From District Burdwan, Shri Syamapada Majumdar collected a stone door-jamb displaying a syncretistic icon of *circa* tenth-eleventh century A.D.

The traditional dolls and toys of Bengal, collected from rural areas and fairs, have considerably enriched the Folk-art Gallery.

During the year, the Sculpture and Painting Galleries were organized regionally and chronologically with the aid of new display equipment set up with the financial assistance received from the Government of India.

13. INDIAN MUSEUM, CALCUTTA.—During the period under report, the Archaeological Section of the Indian Museum acquired a number of specimens from different sources. Noteworthy are two interesting terracottas of late medieval period (*circa* seventeenth century), found in an old ruined mosque of District 24-Parganas. A female torso from District Burdwan in white marble of the late eighteenth century was also received as gift. Two bronze specimens, one Somaskanda from Bengal and the other a multi-headed Tantric Buddhist god from Nepal, both assignable to *circa* eighteenth or early nineteenth century, and a stone image of Vishnu on Garuda from Bengal have been acquired through purchase by the Art Purchase Committee of the Museum. In addition, some potsherds, decorated bricks, terracotta heads and cowrie shells were acquired by undertaking exploration in a number of villages of District 24-Parganas.

The Manuscript collection was enriched by purchasing two Sanskrit manuscripts, one *Rajatarangini* of Kashmir and the other *Yonaraja's* text, both written in Sarada characters.

Two coins, one of Nepal and the other of Balban, were received as gift in the Coin collection.

A newly organized Prehistory Gallery was thrown open to public on 24th August, 1968. Arranged on modern lines with up-to-date display techniques, lighting arrangements and visual aids, this section, exhibiting antiquities belonging to Baluchistan and the Indus Valley, throws considerable light on the early civilizations of the Indo-Pak sub-continent.

Under the reorganization programme, three railing pillars from Bharhut with their corresponding cross-bars, showing life-size *Yakshi* figures and decorative motifs, previously preserved in the Reserve Collection, were set up in the Bharhut Gallery. Improved lighting arrangements were also made in the Sectional Galleries and new trilingual labels on perspex sheets were introduced for the sculptures exhibited in the Galleries.

All the antiquities exhibited in the Archaeological Galleries were photographed for the purpose of documentation.

A mobile archaeological exhibition depicting the rich cultural heritage of the country, the first of its kind, has been launched by taking it round the rural parts of the state of West Bengal in a well-planned Museo-Bus.

The following services were rendered to public:—

(i) Coins identified for outsiders on request.
(ii) Photographs, plaster casts and scholastic information on Indian coins were furnished to scholars to meet their demand.
(iii) Coin collection and the reserve collection of the Prehistory Section were made available to scholars and interested persons for study on request.
(iv) Usual facilities for the study of coins were given to the post-graduate students of the Calcutta University and several other institutions.

14. WEST BENGAL STATE ARCHAEOLOGICAL GALLERY, CALCUTTA.—During the year 1968-69 the State Archaeological Gallery acquired a number of old manuscripts, paintings, metal sculptures, textiles, coins and other objects of art and archaeology.

Noteworthy is a set of early terracotta sealings and figurines, stylistically assignable to the Sunga-Kushan period, from Chandraketugarh, District 24-Parganas. The sealings depict a masted ship or other motifs and are occasionally inscribed in Kharoshthi. A number of terracotta moulded plaques represent *apsarases* in transparent drapery, while the torso of a female divinity is seen wearing amulets representing fish, *makara,* etc., like those on the well-known 'Oxford figurine' from Tamluk.

Among stone sculptures acquired mention may be made of a delicately carved Pala image of Ganga of about the eleventh century A.D. from Bhadrasila, District West Dinajpur, head of a Jaina Tirthankara of greenish chlorite, assignable to *circa* ninth century A.D. from Pakbirra, District Purulia, besides a torso of Vishnu carved in Pala style from Chhatrabhog, District 24-Parganas.

A large collection of Sunga-Kushan, Gupta and medieval terracottas, early medieval bronzes and stone sculptures and later wood-carvings, besides historical documents, manuscripts, paintings, etc. were presented by Sri Kalidas Dutta of Mazilpur, District 24-Parganas, before his demise. These are likely to be accommodated in a new wing.

A gold coin of Sasanka with Siva reclining on bull on the obverse and seated Lakshmi on the reverse was obtained from District Malda. The Museum acquired a number of gold and silver coins of emperor Shah Alam Bahadur Shah II as also a large

silver plaque, inscribed in Persian in Nastaliq characters with the name of Nawab Humayun Jah to commemorate the erection of a summer-house called Motimahal in Murshidabad.

15. BHURI SINGH MUSEUM, CHAMBA.—Fifty leaves of Pahari miniature paintings and sketches were added to the collection of the Museum. Ten pieces of embroidered and plain textiles, consisting of Chamba *rumals, rumals* from Arki (Lower Simla Hills), *cholis* and *ghagra* (skirt) were acquired for the Museum through gift and purchase.

Forty-seven silver coins found at Chamba were presented to the Museum; these comprise largely later Indo-Sassanian coins, besides some debased gold coins and two other coins, which are not yet identified. Three punch-marked coins were purchased from a goldsmith of Arki. Classification of the ancient coins in the Museum collection is in progress.

Among new additions of wood-work, including toys and carved architectural pieces, may be specially noted a female figure carved in the Basohli style of painting, acquired from Shakti-Dehra near Chamba.

A copper image of Siddha, which is a work of high artistic merit of the eighteenth century A.D., is a significant acquisition providing material for study of a popular cult of this region.

The letters written in Takri of regional historical importance were acquired, besides a large number of objects of handicrafts and silver ornaments, peculiar to these areas.

16. GOVERNMENT MUSEUM, CHITTORGARH.—The Museum was started during the year and some wall-cases were provided for display of prehistoric material. A sculpture from Bilot, District Chittorgarh, was added to the Museum collection.

17. LOCAL ANTIQUITIES MUSEUM, CHITRADURGA (MYSORE).—Among acquisitions made during the year may be mentioned sculptures of Mahishasuramardini and a lady attendant and a twelfth century Kannada inscription.

18. CHANDRADHARI MUSEUM, DARBHANGA.—Of the new acquisitions mention may be made of the manuscripts of *Purushapariksha* of Vidyapati and *Rajatarangini* of Bhanudatta, besides some coins, sculptures and bronzes. In addition, eighteenth century jewellery, Kashmiri shawls, ornamental clocks and other metal articles, belonging to the Darbhanga Raj family, were also acquired.

The new museum building is nearing completion and is expected to be ready during the year. New dioramas and show-cases for the Art Gallery have been set up.

19. MUSEUM OF ART AND ARCHAEOLOGY, DHARWAR.—The Museum of Art and Archaeology, attached to the Department of Archaeology, Karnatak University, and Kannada Research Institute, has made some new acquisitions of which notable are a stone inscription from Arjunavada, a hero-stone from Tambur, District Dharwar, sculpture of a Buddhist *Yaksha* and an inscribed slab of about the second century depicting man and a cart with two bullocks from Sannathi, District Gulbarga, and a copper-plate grant of Mangalesa.

20. ASSAM STATE MUSEUM, GAUHATI.—The Museum has recently acquired quite a few stone images and sculptures. Noteworthy are those recovered from the Ambari site in Gauhati where salvage digging is being conducted by the State Department of Archaeology in collaboration with the Gauhati University. These sculptures, assignable to *circa* ninth-tenth centuries, include three standing images of four-armed Vishnu flanked by Lakshmi and Sarasvati, three standing figures of ascetics wearing matted locks and carrying *kamandalu* in the left hand and rosary or sacrificial spoon in the right hand, an image of Agni flanked by his two consorts Svaha and Svadha, six images of ten-armed Mahishasuramardini, two images of Surya, two smaller images of Vishnu, three figures of seated Nandi, more than a dozen *Siva-lingas* and *Yoni-pithas,* besides some architectural fragments.

21. GOVERNMENT MUSEUM, GULBARGA.—Terracotta figurines discovered at Sannathi, a few coins and a palanquin, belonging to the Bijapur Sultanate, were added to the Museum collection during the year.

22. ARCHAEOLOGICAL MUSEUM, HALEBID.—In the structure opposite the open-air Museum a gallery has been set up displaying sculptures on pedestals. Ten recently purchased wood-carvings have been exhibited in wall-cases, besides some sculptures from Belur.

A typical stone image of the Hoysala style, found in the débris of the ruined Nagaresvara temple, was acquired for the Museum.

23. ARCHAEOLOGICAL MUSEUM, HAMPI.—Sculptures lying haphazard were arranged properly in the lawn opposite the Elephants Stables. Bilingual (English and Kannada) labels were provided to the exhibits displayed in the Guards Quarters Galleries.

24. STATE MUSEUM AND CONTEMPORARY ART PAVILION, HYDERABAD.—During the year under report, the State Museum made all-round progress. A total number of eight hundred and eighteen gold and three hundred and ninety-two silver coins, one manuscript, three sculptures, fifty-three bronzes, eleven miniature paintings and fifty-six modern art objects were acquired for the Museum. With a grant provided by the Government of India, running galleries with angular slotted iron and glass show-cases as well as wooden pedestals were prepared for display of paintings on a chronological basis. With their corrugated slotted angles, the show-cases were fixed at low depth for the display of the miniature paintings and teak plywood planks provided to improve the show. Asbestos sheets, suitably painted and coated with insecticides, were provided at the back of the show-cases to keep the white ants away. The display work is in progress and the Pavilion will be thrown open to the public after the completion of the work.

The frescoes, unearthed at Alladurg, District Medak, were displayed on wooden pedestals and a show-case of Bidri Ware was added to the Contemporary Art Pavilion.

The Museum organized or participated in the following exhibitions:—

(i) An exhibition of stone rubbings and estampages by M. Caldwell was organized by the Museum in collaboration with the American Cultural Centre in June 1968 in the Contemporary Art Pavilion.

(ii) An exhibition-stall of select sculptures was set up in the VII Agama Silpa Sadasu in the camp of Sri Sankaracharya at Padmaraonagar in August 1968.

(iii) An exhibition-stall was set up from 5th to 13th October 1968 to participate in the Osmania University Golden Jubilee Celebrations.

(iv) The Museum also participated in the All India Industrial Exhibition held at Hyderabad from 1st January to 12th February 1969.

In pursuance of Government sponsored state-wide drive to form a museum in each district, a District Museum Committee has been formed at Karimnagar and the construction of a museum building has been undertaken through the joint efforts of the public and the State Government. Government land has been acquired for the construction of a District Museum Building also at Nellore.

The repairs to the Museum building are in progress. The ground floor of the Yeleswaram Pavilion has been constructed and the electrical installations completed.

25. CENTRAL MUSEUM, JAIPUR.—Steps have been taken to arrange the Upper Galleries of the Museum to exhibit cultures of the neighbouring countries so that our people may know their neighbours, such as, Nepal, Burma, Ceylon and Indonesia.

Work has been started on the Nepalese and Burmese sections, and two rooms are being provided with wall-cases to display metal objects, wood-carvings, textiles and paintings of these countries. Most of these exhibits are already available in the Museum store, while a few selected ones may either be purchased or acquired from those countries.

Temporary exhibitions of the works of Miss Anna Marie, a renowned artist from Italy, and reproductions of masterpiece paintings from the German Democratic Republic were held in the Albert Hall of the Museum.

26. GURUKUL JHAJJAR MUSEUM, JHAJJAR, DISTRICT ROHTAK.—The acquisitions made during the year included eight thousand coins, sixty seals and sealings, two hundred terracottas dating from the Sunga-Kushan to later ages, twelve sculptures including a red sandstone image of Vishnu riding Garuda from Khokrakot in District Rohtak, thirty manuscripts, thirty beads comprising miniature representations of animals, besides pottery ranging from the Harappan to the Kushan times.

Among coins, a gold coin of Chandragupta II of the Chakra-Vikrama type is important. The Museum also acquired coin-moulds of the Yaudheyas from Sunet, District Ludhiana, and Naurangabad, District Hissar, the former reading *Yaudheyaganasya jaya* and the latter reading *Yaudheyanam Bahudhanyake*. From Naurangabad was also acquired a lead seal engraved with the legend *Yaudheyanam* in the Kushan Brahmi script with the figure of a bull below.

Of seven terracotta plaques from District Jind showing *Ramayana* scenes, which were acquired by the Museum, the one depicting Rama and Sita with an inscribed Sanskrit verse '*antara Raghunandana asasada mahagriddhrah*' in the Siddhamatrika characters of *circa* eight century is significant. Other important acquisitions included two Sunga terracotta plaques, one complete and the other fragmentary, both depicting a seated child learning to write Brahmi alphabet on a wooden board (*takhti*), from Sugh, District Ambala. In the undamaged specimen, the child is depicted wearing rich jewellery and a heavy turban and has an inkpot before him (pl. LVIII). In the other, the child although laden with ornaments, is shown as nude with a toy-elephant and a rattle by his side (pl. LVIII). Both these plaques are inscribed with the vowels as well as consonants, whereas a third plaque from the same site, bears only vowels written repeatedly.

27. ARCHAEOLOGICAL MUSEUM, JHALAWAR.—The Museum has got some additional space and displayed therein sculptures and material of local culture.

28. SARDAR MUSEUM, JODHPUR.—Sections on arms and Marwar handicrafts were rearranged and given final touches. A temporary exhibition of reproductions of masterpiece paintings from Dresden Museum supplied by the German Democratic Republic was arranged in the Museum hall.

29. KOLHAPUR MUSEUM, KOLHAPUR.—The Art, Archaeology and Sculpture Galleries of this Museum have been completely reorganized and special care taken for proper display of the exhibits.

During the Museum Week from 2nd to 8th December, 1968 various programmes were arranged by this Museum.

On behalf of Shri Bhavani Museum, Aundh, a special function was held in this Museum for which art competitions, art demonstrations, educational lectures, film-shows, special exhibition, etc. were arranged.

30. ARCHAEOLOGICAL MUSEUM, KONARAK.—The Museum was organized and thrown open to the public on 30th October, 1968, by Dr. Triguna Sen, Union Minister of Education. Two hundred and eleven pieces of sculptures and architectural fragments have been displayed in its three Galleries. Special reference may be made to the reconstructed Chariot Wheel in Gallery No. 1 (pl. LIX) and reconstructed temple wall scene in Gallery No. 2. Smaller pieces have been displayed and illuminated with concealed lighting inside the cases. The collection throws light on the art of Orissa in the thirteenth century A.D. as the exhibits are entirely from the Sun Temple, Konarak.

Tri-lingual (Hindi, Oriya, English) labels give brief information about each exhibit. The general label is also tri-lingual. The corridors display sketches, charts, and enlarged photographs.

Index cards have been prepared of the antiquities in the reserve collections, with photographs pasted on their back.

31. MUSEUM AND SARASWATI BHANDAR, KOTA.—The Museum acquired and displayed a few sculptures from sites in the Kota area.

32. STATE MUSEUM, LUCKNOW.—During the year, ten hoards comprising nine hundred and seventy coins and old ornaments, discovered from the Districts of Bijnor, Agra, Dehradun, Nainital, Etah, Uttar Kashi, Bulandshahr, Jaunpur and Raebareli were received in the Museum and are under examination. Besides, forty-eight objects were acquired for the Museum, comprising three Natural History specimens of the Mammalia group, eleven stone sculptures, three bronzes and thirty-one Anthropological specimens relating to the Tharu tribe.

An outstanding acquisition of the year is a standing image of Surya (pl. LX) holding a full blown lotus in each hand. Draped in *Udichya-vesha,* he wears *kavacha, kundalas. yajnopavita, kirita-mukuta* and high shoes. A lotus halo, oval in spape, is seen behind his head. Besides his two consorts, Bhudevi, Danda and Pingala are figured in the lower part. This image, made of buff sandstone, is assignable to the ninth century and comes from Alwana, District Barabanki.

Two Galleries of the Natural History Section have been renovated, while plans are ready to reorganize the Archaeological, Painting and Textile Galleries.

Three temporary exhibitions were organized in June 1968, November 1968 and March 1969 at Nainital, Lucknow and Mathura respectively.

33. FORT MUSEUM, MADRAS.—A wall-case displaying porcelain was remodelled for better presentation. The platform in front of the model of Fort St. George was extended and a railing provided. Valuable antiquities were shifted to Gallery No. 4 which is more secure. Pedestals of all antiquities of the Arms Gallery were re-painted. Oil portraits of Lord Clive and Streynsham Master, as well as the marble statue of Lord Cornwallis were chemically treated.

34. GOVERNMENT MUSEUM, MADRAS.—The acquisition made during the year under treasure-trove included bronze figures of Varadaraja, standing and seated Vishnu, Surya, crawling Krishna, Subrahmanya, Nataraja, Somaskanda and Adhikaranandi from various places in District Thanjavur.

Among wood-carvings acquired during the year, six specimens representing Nataraja, Brahma, Nandi, Kali, Vishnu and Gajendramoksha were purchased from Sri Pasupatheswarar Devasthanam, District Thanjavur and four specimens, representing Siva as Kalasamharamurti, Simhavahini, a decorated elephant and Siva as Bhikshatanamurti were purchased from Sastar Koil, District Tiruchchirapalli. A set of five copper plates of Ganga king Durvinita and another set of two copper plates of a Vijayanagara king were also purchased. Six stone sculptures, representing Durga Devi and Chandikesvara from Cholavaram, District North Arcot, were acquired through the good offices of the Collector, while ten inscribed slabs and four sculptures, representing two images of Ganesa and one each of Simhavahini and Vishnu, were presented by Sri S.S.T. Chari, son of the late S. T. Srinivasagopalachari.

Photographs showing the development of temple architecture were renewed. A map of India showing centres of Jaina art was prepared and exhibited in the Jaina Gallery. Twenty-one murals, depicting scenes from the Buddha's life and the *Jataka* tales, were exhibited in the New Buddhist Gallery. A new gallery of Modern Art was opened on the first floor of the National Art Gallery and sixteen paintings were exhibited there.

A pointed butt end celt of basalt, belonging to the Neolithic period, with a specific gravity of 3·01, was collected by the Curator of the Anthropology Section as a surface find, while exploring Kottaithiradu village in Tenkasi Taluk of District Tirunelveli.

35. GOVERNMENT MUSEUM, MANDORE.—A new museum has been opened at Mandore. For the present only four Galleries of Prehistory and Protohistory, Sculptures, Inscriptions and Natural history have been opened to public.

Two more galleries are also proposed to be added and the work is in progress.

36. ARCHAEOLOGICAL MUSEUM, MATHURA.—Thirteen sculptures and one terracotta were added to the Museum collection during the year under review. Significant among these are a red sandstone bust probably of Ardhanarisvara (pl. LXI A), as indicated by two varieties of earrings worn and a third eye on the forehead, of *circa* fifth century A.D. and a tall statuette of Vishnu (pl. LXIB) of the Kushan period. From the point of view of art and iconography, the two sculptures are important. Besides, an early

medieval image of Hanuman—the second of its kind to be found from Mathura region—a Saptamatrika panel and a fragmentary door-lintel, carved with two standing goddesses, a seated *naga,* Karttikeya and a row of eight seated goat-headed figures, also deserve notice. These throw new light on the religious beliefs and art traditions of the great school of Mathura sculpture from seventh century onwards.

Two new Galleries of Bodhisattvas and Jain Tirthankaras were organized and suitable additions and alterations in the other galleries to make them more attractive and educative. Smaller antiquities were provided with brass hooks, while expanded metal frames were fitted to the windows for greater security.

A few antiquities were chemically treated in the chemical laboratory of the Museum.

A small illustrated booklet containing a brief account of the Museum and its collections and a set of descriptive photographic folders were published by the Museum. Some important antiquities were brought to light through the *Bulletin of Archaeology and Museums, U.P.*

An exhibition on the Development of Art and Archaeology in Uttar Pradesh was organized in the Museum. The central theme of the exhibition was to present glimpses of development of art in Uttar Pradesh through the ages. The exhibition, organized by this Museum in collaboration with the State Museum, Lucknow, State Lalit Kala Akademi, State Archaeological Department and the State Directorate of Information and Cultural Affairs, was a great success and drew thousands of visitors.

37. ARCHAEOLOGICAL MUSEUM IN THE DEPARTMENT OF ARCHAEOLOGY, MYSORE.—Several *Viragals* and a few Vijayanagara gold coins were acquired and displayed in the Museum.

38. ARCHAEOLOGICAL MUSEUM, NAGARJUNAKONDA.—Accessioning of the historic pottery and the preparation of index cards are in progress. Plaster casts of six important sculptures were prepared and kept for sale.

39. CENTRAL MUSEUM, NAGPUR.—The Audio-Visual Section exhibited twenty-five films of archaeological interest to the visitors and students from local educational institutions.

The following temporary exhibitions were held in the Museum:

(i) Exhibition of reprints of paintings by the New York Graphic Society;
(ii) Exhibition of paintings by Bhau Samarth and M. Jenning;
(iii) Exhibition of paintings by Local Artist Group;
(iv) Exhibition of philately;
(v) Exhibition of Batik art and painting by the Indo-German Cultural Society, and
(vi) Exhibition of icons by the Indo-German Cultural Society.

40. ARCHAEOLOGICAL MUSEUM, NALANDA.—The reorganization of the Main Hall and Gallery No. 1 was completed. The antiquities in these Galleries are now displayed on new pedestals and in the wall-cases with proper lighting and background. A stone image of Tara belonging to the tenth century A.D. was added to the collection.

41. NATIONAL MUSEUM, NEW DELHI.—The Archaeological Section of the National Museum, New Delhi, was enriched during the year with several notable examples of Indian art and sculpture.

A fragmentary terracotta plaque showing a child seated and learning the alphabet, on a wooden *takhti* (plank) placed between his legs, is a very fine piece of the early Sunga art of *circa* second century B.C. (pl. LXII). Vowels in contemporary Brahmi script have been repeatedly recorded on the *takhti* in this plaque. Discovered at Sugh, near Jagadhri in District Ambala, it was presented by the Punjab University to the National Museum.

A few sculptures from Bharhut, acquired through the efforts of the Director General, Archaeological Survey of India, form important additions to the Sunga gallery of this Museum. Among these, a rectangular panel, in two parts, depicts elephants carrying the relic-caskets of Lord Buddha, the procession being headed by a party of dancers and musicians. The railing pillars, bearing Brahmi inscriptions, present the *Jataka* scenes quite vividly.

A lovely terracotta figure from Badopal, showing a female dancer (pl. LXIII), has been acquired through the courtesy of the Director, Archaeology and Museums, Government of Rajasthan, Jaipur. It belongs to the third century A.D. with evident impact of Mathura art on it.

42. PATNA MUSEUM, PATNA.—The sculptural acquisitions during the year comprised two Pala images of Tara and Surya from District Saharsa, a buff sandstone Vishnu of the tenth century from District Shahabad and a buff sandstone Vishnu of the Late Gupta period from Dighwara, District Saran, besides sixty-two architectural pieces, sculpture fragments and inscribed slabs of the Late Gupta period from the site of the Mundesvari temple at Ramgarh, District Shahabad, received on permanent loan from the Archaeological Survey of India. The Museum also acquired six shouldered celts of copper from Andhari, District Singhbhum, and five electrum coins of Govindachandradeva found in Sohogra, District Saran, received from the District Collector.

43. ARCHAEOLOGICAL MUSEUM, UNIVERSITY OF SAGAR.—The important acquisitions to the Museum during the year included nine Gupta architectural pieces and sculptures from Piparia and ten terracottas from Ahichchhatra and Kausambi.

To the Museum coin-cabinet were added twenty-five coins from Vidisha, thirty coins from Kausambi, fifteen silver punch-marked coins from Ujjain, besides twelve copper coins of the Panchala type and fifteen coins of the Yaudheyas.

44. ARCHAEOLOGICAL MUSEUM, SARNATH.—Minor antiquities, displayed in wall-cases, were rearranged. New pedestals were prepared for the stone umbrella of the Kushan period. Iron hooks were provided for small sculptures and new light-points fixed outside the Museum for better security. The antiquities store room was improved by providing new doors and lights.

45. GOVERNMENT MUSEUM, SRINAGAR.—Display in the Decorative Arts and Textiles Galleries has been further improved and the overcrowding done away with. Labels have also been improved.

46. ARCHAEOLOGICAL MUSEUM, SRIRANGAPATNA.—Five hundred copper coins were acquired and index cards of all the antiquities were prepared. Electric installations have been improved to ensure safety of the wooden structure.

47. TER MUSEUM, TER, DISTRICT OSMANABAD.—The listing work of the exhibits has been completed.

48. ARCHAEOLOGICAL MUSEUM, TRICHUR.—A new set of hero-stones and Sati stones of the period between the fifteenth and eighteenth centuries was recently added to the Museum collections from Attapady Hills, District Palghat. They have been mounted on plain teak-wood pedestals and exhibited in the Entrance Hall.

A guide book to the Museum is under preparation.

49. PRATAP MUSEUM, UDAIPUR.—The Museum was shifted from the old building in the gardens to the Hisab-i-Daftar portion of the palaces. Sections on sculptures and inscriptions were rearranged and some wall-cases for paintings and dioramas were got constructed during the year. As a temporary measure some local textiles have been put on display in one of the Galleries.

50. BHARAT KALA BHAWAN, VARANASI.—The sculptural acquisitions to the Bharat Kala Bhawan during the year included a fragmentary cross-bar decorated with a winged deer, two ring-stones, a stone head and a red sandstone panel of the Kushan art from Mathura showing two seated goddesses, one of them with the face of owl, besides five architectural pieces received on a long-term loan from the Sarnath Museum. Among acquisitions received as gifts mention may be made prehistoric copper-axe, besides two terracotta carts representing human figures and a terracotta discoid skin-rubber decorated with auspicious symbols like the *svastika* and *mina-mithuna*.

51. ARCHAEOLOGICAL MUSEUM, VELHA GOA.—Preparation of index cards for all antiquities was completed. For providing better security, windows in the ground floor were provided with iron grills and the three doors leading to the churches closed.

VII. ARCHITECTURAL SURVEY OF TEMPLES

NORTHERN REGION.—The Temple Survey Project, Northern Region, under Shri M. D. Khare, undertook the collection of literary, epigraphical and archaeological data on pre-Gupta Temples from the earliest times.

The drawing work of the early temples at sites like Nagari, Besnagar and Sanchi was commenced during the period under review. Besides, the drawing and photographic work done earlier in respect of the Gupta temples was also systematized.

SOUTHERN REGION.—The Temple Survey Project, Southern Region, under Shri H. Sarkar, has recently taken up the architectural survey of temples in Kerala. Of more than one hundred temples, mostly of stone-and-timber, surveyed in Districts Palghat, Trichur, Kozhikode and Ernakulam, the majority, on grounds of style and inscriptions, may be dated from the sixteenth to eighteenth centuries. Generally of moderate height, the temple complex in each case occupies a fairly large area with more than one *prakara* surrounding the main shrine or shrines. There are several multi-shrined temples, such as the Vadakkunatha temple at Trichur, having three principal shrines dedicated to Vadakkunnathan *alias* Ten-Kailasanatha, Sankaranarayana and Rama. Significantly, quite often sanctums to Siva, Vishnu, and Bhagavati are found side by side in the same complex. A vast majority of such temples have granite *adhishthana,* although the walls are made of lateritic slabs, heavily plastered and, sometimes having murals. At present, the tile is the main covering material of roofs, of either conical, hipped or pyramidal shapes, but the number of timber-made roofs covered with copper sheets is not small. Most impressive examples, so far found—the majority being *dvitala-vimana*—come from Trichur, Peruvanam (pl. LXIV A), Thiruvanchikulam (pl. LXV B) and Tali near Vadakkanchery (pl. LXIV B), all in District Trichur, where square plans seem to have a wide vogue. On the other hand, temples in District Palghat follow generally a circular ground-plan. The apsidal plans, though not so popular as circular or square ones, largely occur in District Trichur. In fact, the distribution of apsidal shrines is, more or less, along the coastal strip, for it has been found at places like Murdeshwar near Bhatkal, Kota near Kundapur in District South Kanara, Mysore, Tirur and Triprangod in District Kozhikode and at several places in District Trichur.

A few early temples, which fall in the period from the tenth to twelfth centuries, have come to light from Districts Palghat and Trichur. The one noticed at Godapuram, near Alathur, District Palghat, was originally a Jaina monument, of which only loose pieces of *adhishthana*-moulding have survived showing the usual components like *upana, jagati, tripatta-kumuda, kantha* with *kampas* and *pattika;* a few pieces of *vritta-kumuda,* evidently belonging to some other structures, and balustrade or *paksha-sila* are also to be seen at the site. In an exposed section there, one can also notice traces of a granite structure, now buried, having an *adhishthana* of the *manchaka* variety. Incidentally, the fifteenth-century Kalpathi temple at Palghat has a *manchaka* type of *adhishthana.* All the structures at Godapuram, as their mouldings show, were originally square or rectangular on plan, enshrining seated or standing Jina figures, now in the Trichur Archaeological Museum. An inscription discovered from the site helps one in dating the ruins to *circa* tenth century A.D.

The ruined Siva temple at Polpulli (fig. 3) near Palghat, also datable to the tenth century on the basis of a Sanskrit inscription in Nagari characters, is now preserved

only up to the height of the granite *adhishthana*. To the north of the main circular shrine stands a subsidiary structure, square on plan. In all likelihood, the *adhishthana*

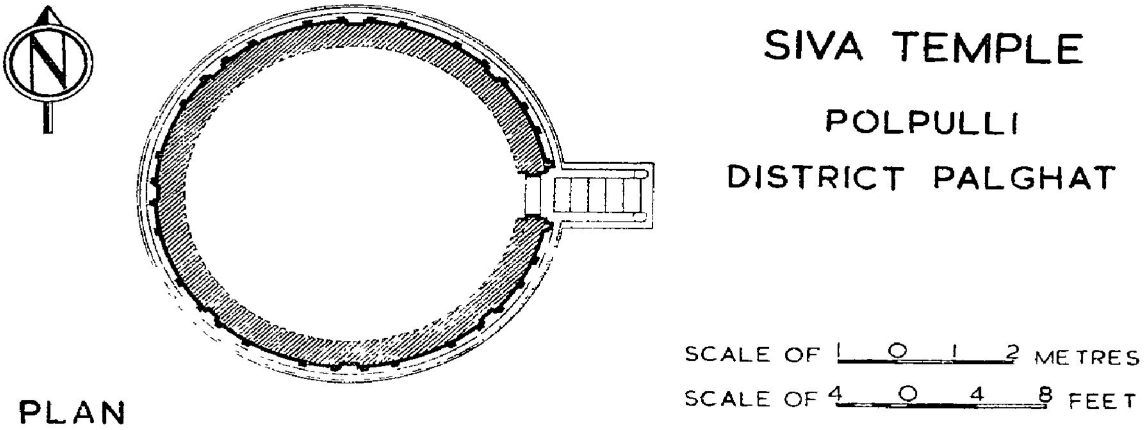

Fig. 3

was more ornate and elaborate than that of the Jaina temple at Godapuram, for the mouldings as they are now arranged, consist of *upana, jagati, vritta-kumuda* followed by three *kanthas* with *kampas,* crowned by *pattika.* The stone *paksha-sila* of the *sopana* marking the entrance from the east bears relief of a standing lion with its head turned back; the creeper-like edge of the balustrade ends in a simple spiral and does not issue from the lion's mouth. Almost an identical type of *paksha-sila* has been noticed in the ruins of the temple at Godapuram. The Siva temple at Polpulli appears to be an example of the *nirandhara* class, but the one at Tirunelli (pl. LXV A) in the outskirts of Palghat, is *sandhara.* The circular inner shrine, built entirely of brick, has no proper *adhishthana* but its walls are relieved by *torana*-arches and pilasters. In its original form, it may have had an octagonal *griva* and *sikhara* built on corbelled arch, as may be inferred from its hollow domed interior. The small *garbhagriha* was enclosed by an outer circular wall now represented by the granite *adhishthana,* with *pranala* or water-chute resting on the *kumuda*-moulding. It is worth mentioning that in the Kerala temples the mouldings above the *kumuda* have no significant projection. Yet the *adhishthana*-mouldings follow the general pattern of the south Indian *vimana* architecture. Anyway, the *pranala* of the Tirunelli temple is a tapering and fluted one issuing from the *makara*'s mouth. In later temples, a *gana* figure seated or standing in various poses, is made to bear the *sundu* (pl. LXVII A). Likewise, the *paksha-sila* shows certain developed features in the later temples. For instance, the creeper-like edge is shown as if emanating from the lion's mouth, and further, the spiral terminates in a lotus or lotus-bud, sometimes with some animal crouching in between the terminal folds. But the balustrade of the Tirunelli temple screens the lateral flights of steps leading to the upper terrace of the temple and bears an inscription of the twelfth century. Thus, the Tirunelli temple differs from the other two, ascribable to the tenth century, not only in displaying a different type of *paksha-sila* but also in the construction of a typical *ekatala-vimana* within the main shrine. The *namaskara-mandapa* in front of the circu-

lar temple at Tirunelli appears to be a later addition; on the other hand, no trace of it is available at Polpulli.

Perhaps the idea of having a *namaskara-mandapa,* generally a pillared hall with pyramidal roof, in front of the main shrine was introduced some time after the twelfth century, at least in the Palghat area. Thus, in the early phase of the temple-architecture of Kerala, the temple consisted of a shrine—circular, square or apsidal on plan—enclosed by a *nalambalam* or cloister; the idea of an inner shrine, used as a *garbhagriha,* also developed by the twelfth century.

The interior of the Kerala temples, not accessible to anyone except the priest, presents several variable features. Generally, the space around the inner shrine is meant for circumambulation. This passage may or may not have any pillars, and, further, the number and alignment of pillars vary from temple to temple. For instance, the Rama temple at Triprayer, District Trichur, has a single row of pillars, while the Siva-Parvati shrine at Trichur contains only two in the middle of each side. In the temple at Venganellur, District Trichur, associated with a twelfth century inscription and fine wood-carvings (pl. LXVI), the interior arrangement consists of two rows of pillars encircling

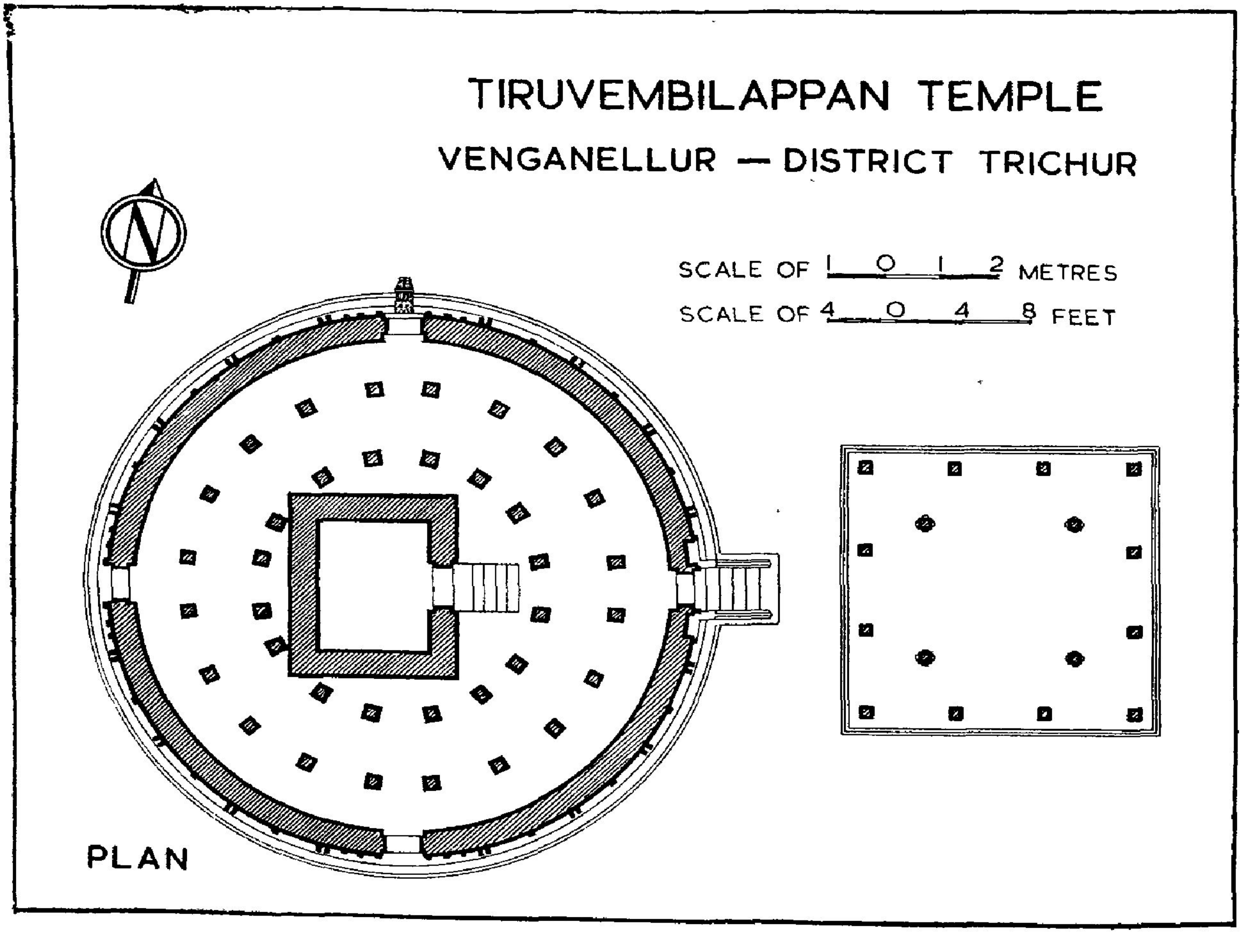

Fig. 4

the inner *vimana,* built on rectangular plan and complete from *adhishthana* to *stupi* (fig. 4). Such arrangement vaguely recalls the one noticed in the Buddhist caves like Junnar on the west coast. Sometimes, a cross-wall divides the interior, as at Appan-Siva temple at Pallavur, District Palghat, into two halves for enshrining the god and his consort. In many instances, the circumambulatory passage around the inner shrine, independent in all respects, has been blocked by later walls thereby indicating its disuse. There are, however, temples of the usual *sandhara* type also; the Tali temple, in District Trichur, built on rectangular plan (though the present structure cannot be dated earlier than the sixteenth century), belongs to this category, despite the occurrence of early inscriptions.

The temples in Districts Palghat and Trichur are profusely decorated with wooden bracket-figures, but except for *dvarapalas* (pl. LXVII B) and carvings on balustrades, stone sculptures are rare.

VIII. PRESERVATION OF MONUMENTS

MONUMENTS OF NATIONAL IMPORTANCE

Central Circle

Madhya Pradesh

1. Siva temple, Sakhor, District Damoh.—Bulged members of the Gupta temple were reset in original position.

2. Group of monuments, Mandu, District Dhar.—Approach-roads to various monuments were reconditioned.

3. Tomb of Nadir Shah, Burhanpur, District East Nimar.—The bulged portions of the dome and the façade have been set in position after rebuilding the damaged parts.

4. Kushak-Mahal, Chanderi, District Guna.—The bulged façade has been reset.

5. Mansingh's palace, Fort, Gwalior.—Damaged portion of the roof was renewed with fresh lime concrete.

6. Rock-cut Jain cave, Gwalior.—A drain was constructed on the floor in Cave 6 in front of the colossal Jain statue to drain out the rain water.

7. Rock-cut Jain colossi (Marimata), Gwalior.—The work of improving the front platform is in progress.

8. Buddhist monuments, Sanchi, District Raisen.—The fencing work is in progress.

9. Maladevi temple, Gyaraspur, District Vidisha.—The work of restoring the retaining wall to the east of the temple has been taken up.

Eastern Circle

Assam

10. Karenghar palace, Jayasagar, District Sibsagar.—In continuation of last year's work (*1967-68*, p. 85), under-pinning of the superstructure wall at the Prasuti-ghar was carried out and open joints in the brick-work were pointed. The cellars have been cleared of débris and the work completed.

11. Sibdol, Sibsagar, District Sibsagar.—A portion of the inner face of the walls of the *garbhagriha*, which was damaged during the last earthquake and the repairs

to which remained incomplete due to non-availability of proper stones, was taken up for repairs with pre-cast reinforced cement concrete slabs duly tinted and finished to match with the existing stones. The work is in progress.

Orissa

12. NILAMADHABA AND SIDHESWARA TEMPLES, GANDHARADI, DISTRICT BOUDH-PHULBANI.—The disturbed ashlar masonry was made good. Open joints of the masonry were grouted and pointed. As a result of the clearance of débris the plinth of the structure was exposed.

13. MONASTERY NO. 1, RATNAGIRI, DISTRICT CUTTACK.—Resetting of the uneven stone pavement of the courtyard is in progress.

14. GROUP OF TEMPLES, BHUBANESWAR, DISTRICT PURI.—New doors and windows of expanded metal with wooden frames have been fixed in the Lingaraj and Ananta-Vasudeva temples.

15. ASOKAN ROCK EDICT, DHAULI, DISTRICT PURI.—Extension of front platform was completed. Mild steel grills have been fixed at the openings to avoid tampering of the inscriptions.

16. SUN TEMPLE, KONARAK, DISTRICT PURI.—The work of filling up the open joints of the stones of the *jagamohana* with cement mortar taken up earlier (*1967-68*, p. 85) is in progress. Muram pathways have also been laid in the compound.

Tripura

17. CHATURDAS-DEVATA TEMPLE, UDAIPUR.—The damaged parapet with lime concrete coping was repaired and the decayed wooden door shutters were renewed. Repairs are in progress.

West Bengal

18. SIDHESWAR TEMPLE, BAHULARA, DISTRICT BANKURA.—A mild steel grated door was fixed at the entrance with locking arrangements for the safety of the loose sculptures inside the temple.

19. SARESWAR AND SAILESWAR TEMPLES, DIHAR, DISTRICT BANKURA.—The roof was made watertight by re-laying the lime concrete terracing and the cracks in the walls filled up. The open joints of the laterite slabs were recess-pointed.

20. SHYAMSUNDAR TEMPLE, MADANPUR, DISTRICT BANKURA.—The cracks in vaults were filled up after the removal of vegetation from the monument. Lime concrete terracing was relaid on the roof to make it watertight and the compound properly levelled for the drainage of rain water.

21. BASULI AND 14 OTHER TEMPLES, NANUR, DISTRICT BIRBHUM.—Vegetation was removed and barbed wire fencing was repaired. Lime concrete was removed for making the Durga temple watertight. The expanded metal doors were repaired and painted.

22. JAIN BRICK TEMPLE, DEULIA, DISTRICT BURDWAN.—The brick wall of the temple was underpinned and joints grouted and recess-pointed. Expanded metal door was provided and general cleaning done.

23. GROUP OF TEMPLES, KALNA, DISTRICT BURDWAN.—In continuation of last year's work (*1967-68*, p. *86*), lime concrete was relaid on the basement floor of the Bijoy-baidyanatha, Rupesvara and Pancharatna temples after repairing the brickwork of the basement walls. Missing portions of the roof of the Pancharatna temple were rebuilt and lime concrete terrace laid for watertightening. The wooden door of the Bijoybaidya-natha temple was renewed and painted.

24. BASUDEV TEMPLE, BANSBARIA, DISTRICT HOOGHLY.—Rank vegetation was removed and cracks and open joints filled up with recess-pointing.

25. MOSQUE, PANDUA, DISTRICT HOOGHLY.—The salt-affected bricks were replaced and open joints pointed.

26. BAISGAZI WALE, GOUR, DISTRICT MALDA.—The work of repairing the damaged brick wall, which was taken up last year (*1967-68*, p. 86), was completed and the top of the structure was watertightened.

27. TOMB OF FATH KHAN, GOUR, DISTRICT MALDA.—Lime concreting of the roof terrace was carried out and the compound-wall repaired.

28. ADINA MOSQUE, PANDUA, DISTRICT MALDA.—The work of putting up the barbed wire fencing around the monument has been taken up.

29. EKLAKHI MAUSOLEUM, PANDUA, DISTRICT MALDA.—The wall cracks were grouted and the lime concrete of the roof was relaid.

30. TOMB AND MOSQUE OF 'ALIVARDI AND SIRAJU'D-DAULA KHOSHBAGH, DISTRICT MURSHIDABAD.—In continuation of the previous year's work (*1967-68*, p. 86), the decayed and salt-affected plaster of the exterior was removed and replastered with composite mortar, retaining the mouldings and niches as per original.

FRONTIER CIRCLE

Jammu and Kashmir

31. MUGHUL ARCADE, VERINAG, DISTRICT ANANTNAG.—In continuation of the earlier work (*1967-68*, p. 86), repairs to the entrance vault were undertaken.

32. ANCIENT MONASTERY AND STUPA, HARWAN, DISTRICT SRINAGAR.—A new shed has been erected for the preservation of the tiled area in the rear of the *Chaitya-griha*.

33. KALA-DERA TEMPLE (1), BABOR, DISTRICT UDHAMPUR.—The bulged portion of the base of this ruined structure has been renovated by relaying the ashlar stone masonry in cement.

MID-EASTERN CIRCLE

Bihar

34. MAURYAN PALACE SITE, KUMRAHAR, PATNA.—The barbed wire fencing was repaired and the weeds and vegetation removed from the site. The antiquities show-room was renovated.

35. EXCAVATED REMAINS, NALANDA, DISTRICT PATNA.—In Monastery No. 11 measures were taken up for the renewal of the concrete flooring after the removal of débris and decayed lime concrete. In temple No. 13 existing tile and C.I. sheet roofing and a portion of the brick masonry were dismantled for providing a new roof with a slope towards the west.

36. SHER SHAH'S TOMB, SASARAM, DISTRICT SHAHABAD.—Floor concreting matching with the original in the main hall and the verandah around was completed. The wood and iron fittings were treated with paint. The work of fencing around with barbed wire was completed and a garden was laid all round the tank. Possession of the tank was taken over from the Fisheries Department of the Bihar State and arrangements made for permanent water supply.

Uttar Pradesh

37. RAMABHAR-STUPA, AMRUDHWA, DISTRICT DEORIA.—The top was cleared and arrangements made for resetting the top course in waterproof mortar.

38. NIRVANA TEMPLE, KUSHINAGAR, DISTRICT DEORIA.—The interior of the shrine was renovated and some minor repairs carried out.

39. BUDDHIST REMAINS, KUSHINAGAR, DISTRICT DEORIA.—Preliminary measures were taken for watertightening the wall top and underpinning various parts of the structures.

40. DHARARA MOSQUE, VARANASI.—Cracks were grouted on the roof of the building. The old iron tie-rod which was found damaged on dismantling the old concrete was welded; for further strengthening another mild steel tie-rod is being provided to hold the flanks together.

41. EXCAVATED SITE, RAJGHAT, DISTRICT VARANASI.—The site was properly graded after the removal of dumps and baulks left by earlier excavators; pits were filled up. Top courses of brick structures were made watertight. The site was fenced and provided with proper drainage.

NORTHERN CIRCLE

Madhya Pradesh

42. SIVA TEMPLE, BHUMRA, DISTRICT SATNA.—The entrance door of the *mandapa* was reset in its original position. The work of restoration of the walls is in progress.

43. AGRA FORT, AGRA.—The sunken floor of the courtyard of Moti-Masjid was properly levelled after the replacement of decayed marble slabs.

44. RAM-BAGH, AGRA.—The fallen portion of the northern compound wall was rebuilt and open joints pointed.

45. TAJ-MAHAL, AGRA.—The northern brick wall of the Gosala enclosure was underpinned with *lakhauri* bricks in several places and the joints pointed. The patches of soot from the entrance arches of the main gate were removed and the affected surface repaired on the original lines.

The brickwork patches were removed from the withered stone pillar bases of the northern verandah and these were strengthened with reinforced concrete, and the mouldings restored in plaster following the original pattern. The original floor level of the verandah was exposed and relaid with fresh lime concrete.

46. AKBAR'S TOMB, SIKANDARA, DISTRICT AGRA.—The decayed concrete of the third floor terrace was replaced by fresh lime concrete. The railings of the stairs and doors were painted and muram spread on the pathways.

47. ITWARI KHAN'S TOMB, SIKANDARA, DISTRICT AGRA.—The fallen compound wall on the northern side was restored.

48. GATEWAY, KHUSRAU-BAGH, ALLAHABAD.—Plastering wherever necessary was done to prevent weathering of the wall.

49. GARHWA FORT, DISTRICT ALLAHABAD.—Steel frame was provided to the open verandah for housing the loose sculptures. The western side wall was raised and fenced by barbed wire and the adjoining tank was desilted.

50. GROUP OF TEMPLES, JAGESHWAR, DISTRICT ALMORA.—A new *mandapa* was built in front of the Durga and Kedarnath temples.

51. LAKSHMIBAI'S PALACE, JHANSI.—Ordinary repairs as necessary were carried out.

52. THE RESIDENCY, LUCKNOW.—Cracks were grouted and patch plastering done wherever necessary in the main building. The compound wall was also plastered.

NORTH-WESTERN CIRCLE

Delhi

53. BARA-KHAMBA, DELHI.—The decayed concrete of the floor was replaced and joints pointed and grouted as necessary. Red *bajri* was spread on the approach road to the monument.

54. CHAUNSATH-KHAMBA, DELHI.—Floor concrete was relaid and arch stones reset.

55. CITY-WALL, KASHMIRI GATE, DELHI.—The fallen portions of the old city-wall were repaired.

56. GHIYATHU'D-DIN TUGHLUQ'S TOMB, DELHI.—The decayed roof surface was renewed with fresh lime cement concrete.

57. JAMA-MASJID, DELHI.—The decayed stones in the verandah were dressed and the old iron-dowels replaced by new copper ones. The joints were pointed and grouted as required. In the northern gateway of the mosque and adjoining verandahs decayed stones were replaced by new ones.

58. QUWWATU'L-ISLAM-MASJID, DELHI.—Stone flooring in the southern verandah of the mosque was renewed.

59. ROSHAN ARA'S TOMB, DELHI.—The *baradari* was cleaned and coated with 'snowcem'.

60. JANTAR-MANTAR, NEW DELHI.—The decayed plaster of the *Yantras* was renewed and given a 'snowcem' wash. The graduated portions of the *Yantras* were cleaned. The tank round the Samrat-Yantra was desilted. An electric pump was installed for drawing water from the tank. Red *bajri* was spread on the pathways. The long tank to the east of the Misra-Yantra was watertightened and fitted with two pumps, one to feed the newly laid fountains and another for pumping out water from a tube-well. The monument was electrified and provided with cultural notices in Hindi and English on red stone slabs. Water coolers for supply of drinking water to visitors were fixed and a booking office at the entrance constructed.

61. PURANA-QILA, NEW DELHI.—In continuation of last year's work (*1967-68*, p. 89), the restoration of the fallen fortification wall was kept in progress.

Haryana

62. KHWAJA KHIZIR'S TOMB, SONEPAT, DISTRICT ROHTAK.—The basement of the tomb was repaired with lime cement mortar. A drain was provided for draining out the water. Further work is in progress.

Himachal Pradesh

63. ROCK-CUT TEMPLE, MASRUR, DISTRICT KANGRA.—The main temple was grouted and pointed to prevent ingress of water.

64. FORT, NURPUR, DISTRICT KANGRA.—The joints of the ruined temple were grouted and pointed.

Punjab

65. FORT, BHATINDA.—In continuation of last year's work (*1967-68*, p. 89), repairs to the terrace on the south-east corner of the fort were kept in progress with earth filling and pointing. The eastern fortification wall with its bastions was repaired with *lakhauri* bricks to a height 15 m. The work is in progress.

Rajasthan

66. HARSAT-MATA TEMPLE, ABANERI, DISTRICT JAIPUR.—The verandahs of the tank were repaired for housing the loose sculptures. Walls were plastered and reflooring done. The arches in the north-east verandah were blocked and doors and windows provided. Large holes in the outer walls of the enclosure were filled with matching material.

Uttar Pradesh

67. SHAH PIR'S TOMB, MEERUT.—Top terrace around the pavilion was relaid with fresh lime concrete. Vegetation was uprooted and damages made good from the tops of the two structures.

68. SHAH ABDU'R-RAZAK'S TOMB AND MOSQUE, JHINJHANA, DISTRICT MUZAFFARNAGAR.—The decayed plaster from the walls of the mosque and tomb was renewed. The floor of the platform in front of the mosque was reconditioned. Breaches in the outer walls of the mosque, the plinth of the main entrance and the enclosure wall were underpinned with country bricks set in lime cement mortar. The marble tiles, missing from the floor of the main tomb were replaced by new ones. 'Snowcem' coat was given to the mosque chambers.

SOUTHERN CIRCLE

Kerala

69. MATTANCHERRY PALACE, COCHIN, DISTRICT ERNAKULAM.—The wood-work of the roof was treated with preservative. The exterior was given a 'Snowcem' wash.

Mysore

70. SRI KALLESWARASWAMI TEMPLE, HALAVAGALU, DISTRICT BELLARY.—The dry stone packing on the exterior of the temple was removed and replaced by random rubble masonry. The roof was relaid with fresh lime concrete.

71. KRISHNA TEMPLE, HAMPI, DISTRICT BELLARY.—The dangerous overhanging pillar and the débris in the southern cloister were removed.

72. UNDERGROUND TEMPLE, HAMPI, DISTRICT BELLARY.—The silt accumulated inside the temple and in the leading channels was removed.

73. VITTHALA TEMPLE, HAMPI, DISTRICT BELLARY.—The approach road was sectioned, graded and gravelled. Side berms were cleared.

74. ZENANA ENCLOSURE AND ELEPHANT STABLES, HAMPI, DISTRICT BELLARY.—The roads and pathways were gravelled.

75. BHIMESVARA TEMPLE, NILAGUNDA, DISTRICT BELLARY.—The accretionary walls and buttresses in front were removed. Further work is in progress.

76. SRI VIDYASANKAR TEMPLE, SRINGERI, DISTRICT CHICKMAGALUR.—Barbed wire fencing was erected on stone posts on the east and west sides and scattered stones were removed.

77. SRI KESAVA TEMPLE, BELUR, DISTRICT HASSAN.—New ornamental doors conforming to the original pattern were fixed to the *ranga-mandapa* of the main shrine and ordinary doors to the Devi shrine.

78. SRI KEDARESVARA TEMPLE, HALEBID, DISTRICT HASSAN.—The disturbed dry-stone compound wall was rebuilt with old material.

79. DARYA DAULAT-BAGH, SRIRANGAPATNA, DISTRICT MANDYA.—Partition walls were constructed in the Naqarkhana to accommodate the booking office.

80. SRI AGHORESVARA TEMPLE, IKKERE, DISTRICT SHIMOGA.—Sand was spread round the Siva and Devi shrines and wood-work painted.

81. SHIVAPPA NAICK'S FORT, NAGAR, DISTRICT SHIMOGA.—Jungle was cleared from the fort walls.

82. KEDARESVARA TEMPLE, NAGALAPURA, DISTRICT TUMKUR.—Surroundings were cleaned and terrace provided around the temple at the basement level. A teakwood door was also fitted.

Tamil Nadu

83. GROUP OF MONUMENTS, MAHABALIPURAM, DISTRICT CHINGLEPUT.—The pathways and approaches to all monuments including those on the hill area were gravelled. The Koneri road was thoroughly repaired. Barbed wire fencing was provided around protected areas at Mukunthanayanar temple and the Tiger-headed rock-cut cave at Salvankuppam.

84. CHENNARAYAPERUMAL TEMPLE, ADIYAMANKOTTAI, DISTRICT DHARMAPURI.—The thick coat of lime-wash was removed from the *vimana,* exposing the original carvings and brick mouldings. New doors were provided for the main and side entrances to the *maha-mandapa.* All loose stones around the temple were collected and stacked.

85. BLOCK NO. XXXVI, 1—4 OLD OFFICERS' MESS, MADRAS.—The old lean-to roof and the first floor of the west side of the building was watertightened.

86. CLIVE'S BUILDING, MADRAS.—The open terrace in front of the library on the second floor was watertightened after thoroughly filling and grouting the cracks underneath. The load-bearing walls, pillars and arch-base on the ground floor were underpinned and plastered.

87. OLD WALL, TONDIARPET, DISTRICT MADRAS.—Decayed portions were plastered and wood-work painted.

88. SRI JALAKANTESVARA TEMPLE, VELLORE, DISTRICT NORTH ARCOT.—Pathways were gravelled and wood-work painted.

89. SRI RANGANATHASVAMY TEMPLE, NAMAKKAL, DISTRICT SALEM.—The decayed flight of steps was rebuilt along with the parapets. Barbed wire fencing was provided round the temple. New ornamental door shutters were fixed in the main shrine. The roofing and wood-work of the kitchen were renovated and its walls and floors plastered. A new beam was inserted in the front *mandapa* replacing the old one.

90. TALAGIRISVARA TEMPLE, PANAMALAI, DISTRICT SOUTH ARCOT.—The decayed parts of the roof were watertightened.

91. SRI BRIHADISVARA TEMPLE, THANJAVUR, DISTRICT THANJAVUR.—The stone flagged floor was reconditioned and patch plastering to walls done.

92. SRI BRIHADISVARA TEMPLE, GANGAIKONDACHOLAPURAM, DISTRICT TIRUCHIRAPPALLI.—The loose stones lying inside the temple were stacked beyond the temple walls. The fallen compound wall on the eastern side was rebuilt. An iron gate was provided to the eastern entrance. The interior walls of the main temple were plastered.

93. SRI BALASUBRAHMANYASWAMY TEMPLE, KANNANUR, DISTRICT TIRUCHIRAPPALLI.—The vegetation growing on the *sikhara* and around the temple was cleared.

94. VALARMADISVARA TEMPLE, NIRPALANI, DISTRICT TIRUCHIRAPPALLI.—The unsatisfactory covering over the missing *sikhara* of this temple has been replaced by R.C.C. slabs within the edges of the tower top. The false ceiling of the *garbhagriha* was provided with country wood planks. Doors were fixed to various sub-shrines and existing doors were fitted with expanded metal frames. Accretionary walls in the *mahamandapa* were removed.

95. SIVA AND SATYAMURTI-PERUMAL TEMPLES, TIRUMAYAM, DISTRICT TIRUCHIRAPPALLI.—The junction of the natural rock terrace with the built portion of the temple roof was made watertight after the removal of decayed masonry and spongy concrete.

SOUTH-EASTERN CIRCLE

Andhra Pradesh

96. MADHAVARAYA TEMPLE, GORANTLA, DISTRICT ANANTAPUR.—Approach road and pathways to the monument were repaired and muram spread over them.

97. GOOTY FORT, DISTRICT ANANTAPUR.—A masonry wall was constructed near the turnstile gate to prevent cattle from straying in.

98. HEMAVATI TEMPLES, DISTRICT ANANTAPUR.—The approaches to the monument were gravelled.

99. CHANDRAGIRI FORT, CHANDRAGIRI, DISTRICT CHITTOOR.—The damaged floor

of the Anjaneyaswamy temple was repaired. The ancient tank in front of Rajah Mahal was cleared of aquatic vegetation. Loose stones were cleared.

100. PARASURAMESWARASWAMI TEMPLE, GUDIMALLAM, DISTRICT CHITTOOR.—Gravelled pathways were provided around the temple.

101. CHENNAKESVARASWAMI TEMPLE, SOMPALLI, DISTRICT CHITTOOR.—The uneven ground in front of the temple was levelled and gravelled pathways provided. Loose sculptures lying outside were collected and kept within the temple.

102. SIDHAVATTAM FORT, SIDHAVATTAM, DISTRICT CUDDAPAH.—The jungle inside was cleared and structures were exposed to view.

103. ABDUL WAHEED KHAN'S TOMB, KURNOOL.—The damaged compound wall was raised and provided with a stone coping.

104. KONDAREDDY-BURJ, KURNOOL.—Damaged and missing barbed wire fencing was made good. The iron gate was raised and refixed.

105. PAPANASI GROUP OF TEMPLES, ALAMPUR, DISTRICT MAHABUBNAGAR.—The protected area was suctioned and cleared. River sand was spread on the approach road to the bathing ghat.

106. BUDDHIST MONUMENTS, GUNTUPALLI, DISTRICT WEST GODAVARI.—The *stupas* were cleared of vegetation and débris. The damaged brickwork of the *chaitya-griha* and *viharas* was reconstructed and watertightened.

Maharashtra

107. GROUP OF TEMPLES, MARKANDA, DISTRICT CHANDA.—Loose sculptures were collected and documented. The fallen compound wall was reconstructed.

108. WAIRAGARH FORT, WAIRAGARH, DISTRICT CHANDA.—The eastern gate, bastions and walls of the monument were cleared of rank vegetation.

SOUTH-WESTERN CIRCLE

Maharashtra

109. ROCK-CUT CAVES, AURANGABAD.—The unsightly masonry pillars and pilasters in cave no. 9 were replaced by those of reinforced cement concrete. The damaged walls and ceiling were reconditioned. The centuries old débris in cave no. 2 was removed and the floor was exposed.

110. ROCK-CUT CAVES, AJANTA, DISTRICT AURANGABAD.—The unsightly masonry pillars in cave no. 6 were replaced by those of reinforced cement concrete finished to match with the original rock surface. The foot bridge in front of cave no. 16 was repaired. With a view to save the sculptures and murals from the nuisance of dust, the

open courts in front of caves 10 to 15 were concreted. Electrification of caves 19 and 26 has been done on an experimental basis.

Steps have also been taken to electrify Cave No. 1.

111. DAULATABAD FORT, DAULATABAD, DISTRICT AURANGABAD.—Rank vegetation was removed from the outermost fortification wall. The roof of the shrines, on the right side of the road near the third gate, was made watertight. While clearing débris round the shrines, earthen jars containing cowrie shells were found.

112. ROCK-CUT CAVES, ELLORA, DISTRICT AURANGABAD.—Drains were cut into the rock surface to prevent flow of rain water over the recently constructed parapets above cave 5 and 6.

113. JOGESWARI CAVES, BOMBAY.—Garbage was removed from the cave top for laying cement concrete and steps were initiated for diversion of sullage from residential quarters. Original floors of the caves were exposed after removing the silt and accumulated water. The backflow of rain water and sullage has been partially stopped by changing the gradient of the approach road.

114. FORT, SION, BOMBAY.—The residential quarters built on the hill-top during the seventeenth century were provided with country tiled roof of the original design. The worn-out wood-work of the structure has been renewed.

115. JIJAMATA'S SAMADHI, PACHAD, DISTRICT KOLABA.—Stone flagging was done round the Samadhi. The roof was repaired.

116. RAIGARH FORT, DISTRICT KOLABA.—Rank vegetation was removed from the structures of the fort. The roof of the Jagadisvara temple was made watertight. The masonry of the side walls was pointed and repaired. Perspex sheet protection was provided to the stone inscription. The partly collapsed Naqarkhana was renovated. The dome of the *samadhi* of Sivaji and the roof the palace within the fort were replastered and its exterior walls pointed. During the cleaning operation an image of Ganesa, some iron implements and a fragmentary stone inscription were found.

117. ROCK-CUT CAVES, KARLA AND BHAJA, DISTRICT POONA.—The ancient rock-cut cisterns were repaired.

118. SHANWARWADA, POONA.—The damaged parapet wall and staircase of the southern and western wings of the Shanwarwada were restored and the rotten wooden beams were replaced by new ones. The cracks on the terrace were filled in.

119. SIVA TEMPLE, AMBARNATH, DISTRICT THANA.—To repair the damage caused by the partial collapse of the *sikhara* the *garbhagriha* was provided with a reinforced concrete slab. Further repairs are in progress. A sculpture shed is being built to house loose sculptures.

Goa

120. SHANTA-DURGA TEMPLE, MARCELLA.—A tiled roof as per original was provided and the exterior of walls plastered.

121. ST. CAJETAN CHURCH, OLD GOA.—The cracks in the roof of the porch were grouted. Vegetation growth on the southern bell tower was cleared. The surface of the structure was rendered watertight.

Mysore

122. GOL GUMBAD, BIJAPUR.—Fallen portions of the enclosure wall were rebuilt. The old building housing the museum was replastered after closing the arched-opening with *jalis.*

123. GROUP OF TEMPLES, AIHOLE, DISTRICT BIJAPUR.—Three out of the nine groups of temples were taken up for clearance during this year. Private houses partially hiding the sight of the ancient temples of the Lad Khan group, were acquired and demolished, thus bringing to full view the Lad Khan, Gaudargudi, Narayanagudi and Nadigergudi. A systematic excavation of the area connecting stratigraphically all the four temples in the Lad Khan group was undertaken. This measure not only brought to light certain hitherto unknown features of the plan and elevation of the Lad Khan (pl. LXVIII) and Gaudargudi temples but also established the precedence of the latter over the former. New moulded courses of the plinth and the original stone pavement around the two temples were exposed at a depth of 2 to 3 metres below the present ground level. A flight of steps with side-entrances, which were later blocked to provide an entrance from the front, was laid bare in the Gaudargudi. Further, six inscribed stone pillars, installed in a row in front of the Lad Khan temple a few centuries after its construction were found *in situ,* but only on two of them the legend, engraved in the Kannada script of the eleventh century, was legible. The pavement around the Lad Khan temple appeared to have been repaired twice, with a corresponding rise in the ground level each time.

A retaining wall of dressed stones was also noticed between the Narayangudi and the Lad Khan temple, the former standing at a higher level and being evidently later in date. Some additions were found to have been made also to Nadigergudi in the tenth-eleventh centuries when its pavement level was raised.

During the clearance of débris from the Kontigudi temple complex, which was hemmed in by modern hutments, a sculptured wall of a temple concealed within a private house was exposed. The mud-plastered sculptures of *mithuna* figures on four pilasters of the wall were relieved of incrustations and the buried plinth of the Kuntigudi was partially unearthed.

A new approach road is under construction.

124. GROUP OF TEMPLES, PATTADKAL, DISTRICT BIJAPUR.—The encroachments comprising modern hutments, were removed and accumulated débris of a thousand years was cleared from within the enclosures of the Virupaksha and Mallikarjuna temples, revealing original pavement and subsidiary shrines besides beautiful sculptured panels of elephants and lions on the plinth and pillars of the *Nandi-mandapa.* The

whole complex of the Mallikarjuna, Virupaksha, Sangamesvara, Kasivisvanatha (pl. LXIX) and Galaganatha temples situated along the Malaprabha river, has been thrown open to view. A few sculptures and two fragmentary inscriptions were also recovered from the débris.

Plans are afoot for undertaking further repairs and for laying out a garden.

125. MUKTESVARA TEMPLE, CHAUDADANAPURA, DISTRICT DHARWAR.—The dwarf retaining wall of the temple was raised to stop erosion. The inscribed slab supporting displaced cornices was replaced by a plain member to prevent further damage to the epigraph. The *ghat*-steps were pointed.

126. KASIVISVESWARA TEMPLE, LAKKUNDI, DISTRICT DHARWAR.—To prevent erosion of the high mound on which this temple stands stone flagging was done over a cushion of concrete.

127. MADHUKESVARA TEMPLE, BANAVASI, DISTRICT NORTH KANARA.—The leaking roofs of *navaranga, antarala* and *garbhagriha* of the temple were rendered watertight. Unsightly deposit of lichen, moss and lime-wash were removed from the *sikhara.* The accretionary wall across the circumambulatory path was demolished. Repairs to Narasimha temple were also carried out.

WESTERN CIRCLE

Gujarat

128. GROUP OF MONUMENTS, SARKHEJ, DISTRICT AHMADABAD.—The damaged walls of the platform of the great mosque near the water-inlet end of the tank near the gate were repaired.

129. HAZIRA, DANTESHWAR, BARODA.—The damaged pavement of the Hazira was repaired both inside and outside. The work of pointing the dry brick masonry of the facade was taken up along with other items of repairs.

130. TAMBEKARWADA, BARODA.—The disturbed parapet and the decayed roof members were renovated. The terrace was relaid with new concrete. The wood-work was given a preservative paint. The repairs are in progress.

131. DARBARGARH, SIHOR, DISTRICT BHAVNAGAR.—Repairs to the leaking roof of the top floor were taken up. The decayed concrete of the verandahs of the first, second and third floors was relaid.

132. DWARKADHISH TEMPLE, DWARKA, DISTRICT JAMNAGAR.—The *adhisthana* mouldings of the main temple were renovated on the original lines. The cement plaster was removed and recess-pointing done. Some decayed stones in the third and fourth *bhumis* of the *sikhara* were replaced by new ones. The decayed rubble packing between the outer and the inner cells of the *sikhara* of the *sabhamandapa* was removed and fresh rubble packing was introduced. The work is in progress.

MONUMENTS MAINTAINED BY STATES

ANDHRA PRADESH

1. QUTB-SHAHI MONUMENTS, GOLCONDA, DISTRICT HYDERABAD.—The promenades and drains in the Qutb-Shahi structures at Golconda were repaired. New pipe-lines to the ancient cisterns, fountains and tank were provided and a pump-set was installed.

2. EXCAVATED REMAINS, PEDDABANKUR, DISTRICT KARIMNAGAR.—The structures exposed during the earlier excavations were recess-pointed.

3. SOMESVARASVAMI TEMPLE, KULPAK, TALUK BHONGIR, DISTRICT NALGONDA.—An R.C.C. roof was built over the sculpture gallery of the temple.

4. ANCIENT TEMPLES, PILLAMARRI, DISTRICT NALGONDA.—Three ancient temples were repaired.

5. SHAMBUNGUDI TEMPLE, WARANGAL.—Repairs to the old temple were carried out.

ASSAM

6. AB-I-HAYAT ROCK INSCRIPTION, KAMAKHYA, DISTRICT KAMRUP.—The site was graded and proper drainage provided. Barbed wire fencing was provided around protected area and approach road constructed.

7. CHANDRASEKHARA TEMPLE, UMANANDA, DISTRICT KAMRUP.—The pinnacle was repaired and the plaster over the extrados renewed. Cracks were filled in after the removal of vegetation.

8. HARA-GAURI TEMPLE, UMANANDA, DISTRICT KAMRUP.—Huge trees growing on the temple were uprooted and the disintegrated masonry consolidated by grouting and under-pinning.

9. RAIDONGIA TEMPLE, DISTRICT LAKHIMPUR.—The crumbling tower of the temple was conserved by providing reinforced columns and beam within the brick masonry together with external props.

10. BAHADUR GAONBURHA'S BURIAL, JORHAT, DISTRICT SIBSAGAR.—The burial site of the martyr was tidied up and fenced.

11. NA-PUKHURI TEMPLE, DISTRICT SIBSAGAR.—Vegetation was removed from all over the temple structure.

GUJARAT

The following monuments were attended to:

12. KADIA DUNGAR CAVES, ZANZPORE, DISTRICT BROACH.

13. VIKIYA-VAV, DHEBAR, DISTRICT JAMNAGAR.

14. NAVALAKHA TEMPLE, GHUMALI, DISTRICT JAMNAGAR.

15. SONKASARI TEMPLE, GHUMALI, DISTRICT JAMNAGAR.

16. ADI-VAV, JUNAGADH.

17. FORT-WALL, UPARKOT, DISTRICT JUNAGADH.

18. JAMI'-MASJID, UPARKOT, DISTRICT JUNAGADH.

19. KOTHA, UPARKOT, DISTRICT JUNAGADH.

20. BAHU-VAV, LAVANA, DISTRICT PANCHMAHALS.

21. GOP TEMPLE, LAVANA, DISTRICT PANCHMAHALS.

22. SAS-VAV, LAVANA, DISTRICT PANCHMAHALS.

23. ANCIENT TEMPLE AND KUND, LAVANA, DISTRICT PANCHMAHALS.

24. ANCIENT TEMPLES, ABHAPUR, DISTRICT SABARKANTHA.

25. SIVA TEMPLE (pl. LXX) AND PANCHAYATANA SHRINE (pl. LXXI), ANTARSUBA, DISTRICT SABARKANTHA.

26. STEP-WELL, CHORIWAD, DISTRICT SABARKANTHA.

27. HARISHCHANDRA-CHORI, SHAMLAJI, DISTRICT SABARKANTHA.

28. STEP-WELL, TITOI, DISTRICT SABARKANTHA.

KERALA

29. KRISHNAPURAM PALACE, KAVAMKULAM, DISTRICT ALLEPPEY.—The building was cleared of vegetation. Wood carvings were treated with 'cuprinol'. Extensive repairs, carried out to the palace, included renewal of damaged ceiling planks, filling up of crevices and strengthening of walls.

30. ROCK-CUT TEMPLE, CHADAYAMANGALAM.—Repairs to the monument are in progress.

31. FORT, PALLIPURAM.—Fencing was provided to the monument.

MADHYA PRADESH

32. BUDDHIST MONUMENTS, SIRPUR, DISTRICT RAIPUR.—The heavy jungle growth around the Svastika and Chandrakuti *viharas* was removed. The fallen structural members were reset properly. Besides, protection notices and approach-roads were provided.

MAHARASHTRA

The following monuments received attention:

33. SONERI-MAHAL, AURANGABAD.

34. BASTIONS AND GATES, AMALNER, DISTRICT JALGAON.

ORISSA

35. OLD FORT, GANJAM.—The repairs to the central block taken up earlier (*1967-68*, p. 94) were completed. Conservation work of the walls and rampart was also undertaken. The old wall within the fort has been salvaged.

36. CHANDI TEMPLE, KENDULI, DISTRICT PURI.—In continuation of the previous year's work (*1967-68*, p. 94) arrangements for the proper preservation of the main temple have been made. The major portion of the *jagamohana* has been renovated.

RAJASTHAN

The following monuments were attended to:

37. ANCIENT TEMPLES, BAGIRA, AJMER.

38. SIVA TEMPLE, JHANWALA.

39. AMBER PALACES, JAIPUR.

40. DILARAM GARDENS, AMBER, JAIPUR.

41. PALACES, UDAIPUR.

TAMIL NADU

42. CHOKKISVARA TEMPLE, KANCHIPURAM, DISTRICT CHINGLEPUT.—The basement bearing inscriptions was exposed by removing the accumulated earth around. The dislodged *sikhara* and walls on the three sides of the *vimana,* which were taken up for restoration, have almost been reset.

43. GANGAIKONDA-CHOLISVARAM TEMPLE, KUZAMBANDAL, DISTRICT NORTH ARCOT.—The *salas* and *kutas* in the second *tala* of the *vimana* along with the *sikhara* were reset (Pl. LXXII) after the removal of vegetation. The top of the *mukha-mandapa* was watertightened by laying a course of brick in cement. The damaged portion of the *mandapa* was dismantled and restored. The repairs are in progress.

44. PALACE REMAINS, KATTABOMMAN, PONCHALANKURICHI, DISTRICT TIRUNELVELI.—The débris was cleared exposing some structural remains. During clearance operation cannon-balls, porcelain plates, etc. were found. The floors of the darbar-hall and *kalyana-mandapa* were plastered as per original pattern. The platform in the *kalyana-mandapa* was rebuilt. A drain was constructed and the mud floors were restored.

UTTAR PRADESH

The following monuments were attended to:

45. SAMADHI, SANT KABIRDAS, MAGHAR, DISTRICT BASTI.

46. VALMIKI-ASHRAM, BITHOOR, DISTRICT KANPUR.

47. RAUSHANU'D-DAULA KUTCHERY, LUCKNOW.

IX. ARCHAEOLOGICAL CHEMISTRY[1]

TREATMENT OF MONUMENTS AND PAINTINGS

ANDHRA PRADESH

1. UNDAVALLI CAVES, DISTRICT GUNTUR.—The paintings in the caves, executed on lime-plaster, were cleaned and preserved. The damaged edges of the painted plaster were filletted and loose paint films secured to the priming.

ASSAM

2. DUARGARILA ROCK-INSCRIPTION, KAMAKHYA HILL AND ROCK-CUT SCULPTURES OF VISHNU-JANARDAN, GAUHATI, DISTRICT KAMRUP.—The rock-inscription and Vishnu-Janardan sculpture which were thickly covered with moss, fungus, lichen, dirt and dust were chemically treated.

DELHI

3. DIWAN-I-KHAS, RED FORT.—The gaps and holes in the painted wooden ceiling of the monument were filled with suitably tinted plaster to match the surroundings.

GUJARAT

4. JAINA TEMPLE, ABHAPUR AND SIVA TEMPLE, ANTARSUBA, DISTRICT SABAR-KANTHA.—The main door-frames of the temples were cleaned of lime-wash and vegetational growth like moss, lichen and algae and treated with a fungicidal chemical. The treated surface was finally preserved with a coat of resinous solution.

KERALA

5. MATTANCHERI PALACE, COCHIN.—The painted panels were cleaned after the removal of old yellowed preservatives. A fresh coat of polyvinyl acetate was applied to the cleaned panels.

MADHYA PRADESH

6. VISHWANATH TEMPLE, KHAJURAHO, DISTRICT CHHATARPUR.—The temple was taken up for eradication of moss and lichen besides thick layers of lime-wash. At some places lime-wash was applied over the moss and lichen and elsewhere moss and lichen grew through the layers of lime-wash. Oxalic and acetic acids are proposed to be tried

[1] Information from: 4, the Director of Archaeology and Museums, Gujarat State; 21, the Director of Archaeology and Museums, Rajasthan State; and the rest, the Chief Archaeological Chemist of the Survey.

here in place of mineral acids for removal of the lime. Work was also executed on the subsidiary temples.

7. ADAMGARH ROCK-SHELTERS, HOSHANGABAD, DISTRICT HOSHANGABAD.—The paintings in the rock-shelters which had suffered by direct exposure to heat, light and moisture were cleaned and consolidated.

8. DOROTHY DEEP AND BANIA BERI CAVES, PACHMARHI, DISTRICT HOSHANGABAD.—The dark and disintegrating coat of preservative applied to the paintings in these caves in the past was removed. The paintings were cleaned with suitable solvents and preserved with a dilute resin solution.

MYSORE

9. TIPU SULTAN PALACE, BANGALORE.—The chemical treatment of the wall-paintings of the monument was initiated with the north-eastern enclosure on the first floor with a view to salvaging and preserving the faded colour work on the walls and wooden pillars and ceilings.

10. CHENNAKESAVA TEMPLE, BELUR, DISTRICT HASSAN.—The sculptures and reliefs on the exterior of the eastern wall were chemically cleaned.

11. GOMMATESVARA STATUE, SRAVANABELAGOLA, DISTRICT HASSAN.—The cleaning of the colossal statue of Gommatesvara has been initiated and the work is in progress. Wax applied in the previous year to the entire surface of the statue as a protective coat against the smearing of ghee, oil, coconut juice, soot, vermilion, sandal paste, etc. during the *Mastakabhisheka* ceremony, was carefully removed. The exfoliation of rock at the feet of the image due to salt action is also being attended to.

12. DARIA DAULAT-BAGH, SRIRANGAPATNA, DISTRICT MANDYA.—Loose paint films were fixed in the archways of the north verandah on the first floor, while painted panels on the ground floor were extensively filletted.

ORISSA

13. BUDDHIST MONASTERY, RATNAGIRI, DISTRICT CUTTACK.—A number of sculptures lying in the open were subjected to chemical treatment for eradication of mossy growth and removal of soluble salts.

14. BAITAL DEUL TEMPLE, BHUBANESWAR, DISTRICT PURI.—After removing moss and lichen and lime-wash, the cleaned temple was given fungicidal and preservative treatment to prevent recurrence of vegetation.

15. LINGARAJA TEMPLE, BHUBANESWAR, DISTRICT PURI.—The outer surface of the Nandi and Nisha-Parvati shrines of the temple was cleaned of vegetational growth and bird leavings. Much restoration came to view after removal of layers of moss and lichen. The work is in progress.

16. ASOKAN INSCRIPTIONS AND ROCK-CUT ELEPHANT SCULPTURE, DHAULI, DISTRICT PURI.—All the accretions from the inscribed surface of the rock were successfully removed. Only sustained and gradual action of chemicals like ammonia was effective in lightening the ugly marks of the mineral deposits. The figure of elephant above the inscription was also cleared of a heavy coating of moss and preserved.

17. SUN TEMPLE, KONARAK, DISTRICT PURI.—Experiments conducted on the temple with application of ochre suspensions to reduce surface porosity of the decaying khondalite and other stones and to blunt the effects of sand-blasting continued. The cleaned upper part of the temple was coated with zinc silicofluoride fungicide and polyvinyl acetate resin preservative. A small column, hitherto not cleared of vegetational growth, was freed of accretion. Trials with ochre suspensions are now at the final stage.

The famous sculptures of horses, elephants and lions at Konarak, which were overgrown with thick moss and lichen, were also chemically treated and preserved. The treatment has made a material difference to the appearance of these giant sculptures.

18. CHAUSATH YOGINI TEMPLE, HIRAPUR, DISTRICT PURI.—Altogether eighty small sculptures made of sandstone, chlorite and other stones were chemically cleaned, subjected to fungicidal treatment and given a preservative coating of polyvinyl acetate resin.

PUNJAB

19. TOMB OF PUPIL MUSICIAN, NAKODAR, DISTRICT JULLUNDUR.—In continuation of previous year's work (*1967-68*, p. 97) some paintings and tile-work were put to elaborate chemical treatment for removal of moss and lichen. On the painted surface this type of accretion was eradicated with the help of turpentine. The work is in progress.

RAJASTHAN

20. PUNDARIK-JI-KI-HAVELI, JAIPUR.—The chemical treatment of the paintings on this monument was resumed. Since the paintings are in a closed room, the colours have retained their brightness. Loose plaster was fixed back to the support and cobwebs, insect-nests, hand grease and dust, disfiguring the paint layer, were removed. Paint flaking, caused by water percolation through the roof in the past, was consolidated. The work is to continue.

21. BHOJANSHALA PALACE, AMBER, DISTRICT JAIPUR.—Wall paintings in one of the rooms of this building were cleaned and preserved.

TAMIL NADU

22. KAILASANATHA TEMPLE, KANCHIPURAM, DISTRICT CHINGLEPUT.—Certain areas in cells 3 and 23 of the temple which were originally covered by lime plaster, were stripped, revealing new paintings. Old preservatives were removed from the paintings and fresh preservatives applied. Work on exposing further areas of old paintings is to continue.

23. MONUMENTS, MAHABALIPURAM, DISTRICT CHINGLEPUT.—The accretional deposits and vegetation growth were removed from the Draupadi Ratha, Nakula-Sahadeva Ratha and the elephant and lion sculptures at the Five Rathas. The eradication of the hard incrustations from the Govardhana Panel was taken in hand.

24. CHENNARAYAPERUMAL TEMPLE, ADIOMMANKOTTAL, DISTRICT DHARMAPURI.—The loose edges of plaster bearing the paintings were filletted. Further treatment and preservation of the paintings on the ceiling will be carried out during the ensuing year.

25. BRIHADISVARA TEMPLE, THANJAVUR, DISTRICT THANJAVUR.—The Nayaka paintings in chambers 13 and 14 in the circumambulatory passage of the temple were taken up for chemical cleaning and preservation. The bulged portions of the Chola painted panels in chambers 7, 9 and 11 were refixed. Vinyl acetate or liquid plaster of Paris of suitable concentration was carefully injected into the bulged areas to ensure consolidation of the affected paintings.

UTTAR PRADESH

26. TOMB OF SULTANU'N-NISA BEGAM, KHUSRAU BAGH, ALLAHABAD.—The wall-paintings inside the tomb, which were covered with thick coat of lime-wash and tended to flake, were successfully cleaned, consolidated and preserved.

27. ASVAMEDHA SITE NO. 3, KALSI, DISTRICT DEHRA DUN.—The growing tufts of moss on the inscribed and plain bricks on this site were eliminated and the bricks were given fungicidal and preservative applications. The bricks are porous and hold moisture and, being directly exposed to sun and heavy rains of the region, tend to crumble with passage of time.

28. RANI-MAHAL, JHANSI, DISTRICT JHANSI.—The wall-paintings in the Rani's retiring room have been cleaned except for those on the ceiling. Work was also taken up on the paintings in the adjoining galleries. The paintings in the monument are generally covered with a thin layer of darkening varnish and other accretions which were removed with the help of suitable solvents. The work is in progress.

WEST BENGAL

29. JOR BANGLA TEMPLE, VISHNUPUR, DISTRICT BANKURA.—In continuation of the previous year's work (*1967-68*, p. 97) the outer walls of the temple as well as the inner walls of its verandah were taken up for treatment. Extraction of salts by repeated applications of paper pulp and eradication of moss and lichen constituted the main work on the outside. In the interior, removal of thick layers of fat, smoke, lime-wash and ochre-coats was attended to.

30. BRINDABAN CHANDRA TEMPLE, GUPTIPARA, DISTRICT HOOGHLY.—Chemical treatment of the tempera paintings on the walls of the shellove entrance verandah of this temple was commenced. On account of inadequate protection from the elements, including strong light, the colours have faded, pulverised, flaked and attracted extraneous accretions. Since the binding material of the paint layer has deteriorated, removal of the overlying accretions is being accomplished with great care and is followed up with consolidating the pigments. Both polar and non-polar solvents have been found useful in the work which is to continue. Some of the panels seem to have undergone restoration.

TREATMENT OF EXCAVATED OBJECTS & MUSEUM EXHIBITS

Antiquities, comprising mainly copper objects and numbering eleven thousand four hundred and eight, were chemically treated and preserved. Out of these as many as eleven thousand one hundred and fifty were copper coins found at Hauz Khas, New Delhi, and the rest were finds from various ancient sites like Ahichchhatra, Kalibangan, Atranjikhera, Paiyampalli, etc. Besides, a copper frying pan was also subjected to chemical treatment. The old yellowed varnish was removed from the oil portrait of Lord Clive, displayed in the Fort Museum, Fort St. George, Madras and a fresh coat of varnish (mastic) applied.

In the laboratory of the National Museum, New Delhi, some of the stone sculptures covered with accretionary deposits were chemically cleaned. One of them, viz. a Kushan sandstone Lion Capital acquired from Rohtak, was found covered with thick oil paint which was removed by careful application of a solution of alcohol, acetone and turpentine. Similarly, a few Sunga stone panels from Bharhut, disfigured by white patches on the surface, were also treated chemically. Tests for soluble salts and insoluble accretions were made and it was found that an application of ·5 to 1% hydrochloric acid followed by a thorough washing removed all the surface stains, while the organic stains were removed with alcohol.[1]

About eighty-five antiquities, comprising copper coins and iron objects from the excavation at Noh, forty-five stone sculptures and fifty coins were treated and preserved in the laboratory of the Department of Archaeology, Rajasthan Government. In addition, the entire textile collection of the Jaipur Museum was given regular fumigation.[2]

ANALYSES AND RESEARCH

GEOCHRONOLOGICAL STUDIES.—Geochronological investigations were carried out on a large number of specimens collected from several archaeological sites such as Lothal and Pachmarhi and those along the Belan river (District Mirzapur), and in Rajasthan. The section on the Belan is said to show Early, Middle and Late Stone Age industries. Eight specimens of soil from the Belan section were subjected to mechanical analysis. Similarly, seventeen specimens from Atranjikhera excavations, five specimens from Ambkheri excavations and ten specimens from Lekhahia (District Mirzapur) were subjected to detailed mechanical analysis. Side by side, seven soil specimens from Atranjikhera, ten specimens from Bhadheahwan and eight specimens from Vadamadurai were chemically analysed. The study of laterites was continued and the data collected during the year were examined with reference to the results published by other workers.

Chemical Analysis.—Detailed laboratory tests and chemical analysis were carried out on fifty-six specimens from different excavated sites and monuments. The specimens comprised rock, metal, plaster, pigments, etc. For determining the composition of Ajanta plaster a detailed study was carried out and report prepared.

In connection with the study of Indian rock-paintings, several drawings and photographs were prepared. A large number of photographs and some colour transparencies were also made in connection with the work of documentation of chemical conservation.

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[1] Information from the Director, National Museum, New Delhi.
[2] Information from the Director of Archaeology and Museums, Rajasthan State.

X. ARCHAEOLOGICAL GARDENS[1]

ANDHRA PRADESH

1. HILL-TOP, NAGARJUNAKONDA, DISTRICT GUNTUR.—Several new varieties of plants obtained from Agra, Bangalore and Srirangapatna were introduced.

2. QUTB-SHAHI TOMBS, GOLCONDA, DISTRICT HYDERABAD.—The garden around the Qutb-shahi tombs was beautified by laying out lawns, planting decorative trees and shrubs and constructing cisterns, fountains and cascades.

ASSAM

3. SHIVDOL TEMPLE, JAISAGAR, DISTRICT SIBSAGAR.—Preliminary horticultural operations comprising digging and levelling were completed, involving removal of enormous quantity of stone pieces and boulders.

4. VISHNUDOL TEMPLE, JAISAGAR, DISTRICT SIBSAGAR.—The entire area around this temple, lying neglected for decades, was cleared of wild vegetation and cultivated and levelled. Pathways were carved out and a decent garden, comprising lawns, shrubberies, groups of flowering trees, flower-beds and rockeries, was laid out. A pipe-line has been provided and an electric pumping set capable of yielding 5000 gallons of water per hour commissioned.

BIHAR

5. EXCAVATED REMAINS, KUMRAHAR, PATNA.—Two front lawns were re-turfed and casualties caused to the orchard, shrubberies and rockeries during last year's flood were repaired.

6. SHER SHAH'S TOMB, SASARAM, DISTRICT SHAHABAD.—A beautiful garden has been developed around this monument and installation of a pipe-line and an electric pumping set has been completed.

DELHI

7. ARAB-KI-SARAI, NEW DELHI.—Casualties of bougainvilleas and ashok were made good.

8. HUMAYUN'S TOMB, NEW DELHI.—New varieties of bougainvilleas, lantanas, thujas and cannas were introduced in the beds and casualties in the rose-beds and shrubbery were filled up. Jungli Bagh area was cleaned to provide picnic spots.

9. JANTAR-MANTAR, NEW DELHI.—Annual beds were introduced in the front and back sides of the central tank and rose-beds were filled up with budded roses.

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[1] Information from: 2, the Director of Archaeology, Andhra Pradesh; 17, the Director of Archaeology, Kerala; and the rest from the Chief Horticulturist of the Survey.

10. KOTLA FIRUZ SHAH, NEW DELHI.—Beds of annuals and roses were introduced in the front area and the dot plants of bougainvilleas, lantanas and meyniaerecta were replaced by new varieties.

11. LODI TOMBS, NEW DELHI.—Annual beds were introduced in Sikander Shah's tomb and casualties filled up with new varieties.

12. PURANA-QILA, NEW DELHI.—After two decades, gardening operations were resumed in this monument which was under refugee occupation. The operations involved extensive jungle clearance, disposal of dead and unwanted trees, large-scale clearance and dressing, laying of a pipe-line and desilting of the baoli.

13. QUTB, MEHRAULI, DELHI.—Roses and shrubs were replaced by new varieties and laying of a pipe-line was completed. Jungli Bagh area was cleared of wild growth with a view to provide picnic spots.

14. RED FORT, DELHI.—Casualties of roses, saroos, bougainvilleas and thujas were made good and annual beds introduced in the Diwan-i-Khas area.

15. SAFDARJUNG TOMB, NEW DELHI.—The rose-beds were replaced by new varieties and new annual beds were introduced along the front and back water-channels.

GOA

16. MONUMENTS, VELHA GOA.—Gap filling of perennials was attended with success and new varieties of ferns, shrubs and roses introduced.

KERALA

17. KRISHNAPURAM PALACE, KAYAMKULAM, DISTRICT TRICHUR.—A pipe-line was laid in the premises and a fountain constructed at the main entrance.

MADHYA PRADESH

18. GROUP OF TEMPLES, KHAJURAHO, DISTRICT CHATARPUR.—Re-turfing of lawns was carried out and the casualties in the shrubs, roses and cannas were filled up. Dot plants were replaced by bougainvilleas. Another well was dug up for ensuring regular water supply to the garden throughout the year.

MAHARASHTRA

19. BIBI-KA-MAQBARA, AURANGABAD.—The garden around this tomb was taken over by the Garden Branch for regular maintenance.

20. SHANWARWADA, POONA.—Some of the grass plots in the upper terrace were re-turfed.

MYSORE

21. ALI II RAUZA, BIJAPUR.—The garden was nicely maintained and a good quantity of white jwar was grown under 'Grow More Food' campaign.

22. GOL-GUMBAD, BIJAPUR.—The garden remained in a trim condition and Mexican wheat and local maize, green gram, wheat and jwar were grown under 'Grow More Food' campaign.

23. HOYSALESWARA TEMPLE, HALEBID, DISTRICT HASSAN.—Arrangements were made for boring a well in the garden premises.

24. DARIYA-DAULAT BAGH, SRIRANGAPATNA, DISTRICT MANDYA.—Land measuring about 22½ acres was brought under cultivation under 'Grow More Food' campaign for growing paddy and horse gram. Several thousands of plants were propagated and a few new varieties introduced. The intake structure consisting of a pump-house and a pit for lifting water direct from the river Cauvery was almost completed.

25. KESAVA TEMPLE, SOMANATHAPUR, DISTRICT MYSORE.—The garden was nicely maintained and coconut palms and hibiscus varieties were introduced.

RAJASTHAN

26. ANASAGAR BARADARI, AJMER.—The garden was kept in a presentable condition throughout the year.

27. PALACES, DIG, DISTRICT BHARATPUR.—New beds of roses, cannas, annuals and jasminiums were introduced and the garden was maintained in bloom throughout the year.

UTTAR PRADESH

28. FORT, AGRA.—Two lawns were re-turfed with quality doob grass. Rabi crop, grown in the outer area of the fort under 'Grow More Food' campaign, yielded 38 quintals of wheat, 4·5 quintals of barley and 80 quintals of fodder. In an area of half an acre different varieties of annuals were planted which bloomed profusely, yielding a good quantity of seeds.

29. ITIMADU'D-DAULA, AGRA.—Two plots were re-turfed with Calcutta doob grass.

30. KHAN-I-ALAM NURSERY, AGRA.—The area in front of Khan-i-Alam Nursery was developed and steps taken to raise the stock of different varieties of plants to cope with the sale.

31. RAMBAGH, AGRA.—Propagation of different varieties of fruit plants was accelerated.

32. AKBAR'S TOMB, SIKANDARA, AGRA.—Three lawns comprising an area of 5 acres re-turfed with good quality doob grass. In an area of ¼ acre Edward Roses were planted for raising stock required for budding operations. Under 'Grow More Food' campaign, 32 quintals of urd were grown in the Kharif season and 410 maunds of wheat, 190 maunds of barley, 40 maunds of gram and 10 maunds of mixed crop, besides 1000 maunds of wheat straw in the Rabi season.

33. TAJ-MAHAL, AGRA.—Four old lawns of the Taj garden were dug out and re-turfed with Calcutta doob grass. The entire garden was maintained in a presentable condition throughout the year.

34. RESIDENCY GARDEN, LUCKNOW.—A new Rosarium was laid out and latest varieties introduced to enrich the stock of roses. A new conservatory was also constructed to house the shade-loving plants against adverse weather. About 20 quintals of wheat was produced under 'Grow More Food' campaign.

XI. PUBLICATIONS

PUBLICATIONS OF THE SURVEY

1. INDIAN ARCHAEOLOGY—A REVIEW.—The number for 1967-68 was published.

2. EPIGRAPHIA INDICA.—The following parts were published: part iii (July 1967) and iv (October 1967) of Volume XXXVII.

3. EPIGRAPHIA INDICA—ARABIC AND PERSIAN SUPPLEMENT.—The issue for 1967 was released. The number for 1968 is in advanced stage of printing.

4. GUIDE BOOKS.—*Konarak,* by (Smt.) Debala Mitra and the sixth edition of *Ajanta* by the same author were brought out.

5. FOLDERS.—Three Folders on Konarak in Hindi, Oriya, English and two on Jantar-Mantar (New Delhi), in Hindi and English, were published.

6. PICTURE POSTCARDS.—The sets of Ajanta (both monochrome and polychrome) Aurangabad and Daulatabad, Ellora, Elephanta, Hampi, Halebid, Khajuraho and Nagarjunakonda were reprinted. Three polychrome cards showing various monuments within Jantar-Mantar complex (New Delhi) were also released.

OTHER PUBLICATIONS

ANDHRA PRADESH.—The Department of Archaeology and Museums, Andhra Pradesh, Hyderabad, released the following publications: (i) *Annual Report on Epigraphy for 1966,* by Dr. N. Venkataramanayya, (ii) *Epigraphia Andhrica, Volume I,* edited by Dr. N. Venkataramanayya, (iii) *Monograph on the Discovery of Mural Paintings,* by Mohd. Abdul Waheed Khan and (iv) *Buddha Darsanam* (in Telugu), by K. Lakshmana Sastry.

BIHAR.—The Chandradhari Museum, Darbhanga, Bihar, published a catalogue of select sculptures and other archaeological antiquities in the museum.

JAMMU AND KASHMIR.—The Directorate of Libraries and Archives, Jammu and Kashmir, has made the survey reports for 1965-66 press-ready.

KERALA.—The Guide to murals and Padmanabhapuram palace has been sent to press by Department of Archaeology, Kerala, Trivandrum.

MAHARASHTRA.—*The Catalogue of Coins in the Central Museum, Nagpur—Mughal Emperors,* part I, by V. P. Rode is in final stage of printing. *Ter-chi-Margadarsika* i.e. guide to Ter (in Marathi) by late Dr. M. G. Dikshit has been made press-ready.

MYSORE.—The Kannada Research Institute, Dharwar, published: (i) *Basavesvara and His Times,* by Dr. P. B. Desai, (ii) *Karnataka Inscriptions,* volume I, by B. R. Gopal and (iii) *Karnataka Architecture and its Ramifications,* by Shri K. V. Soundararajan.

The Director of Archaeology, Mysore, has made the reports on excavations at T. Narasipur press-ready.

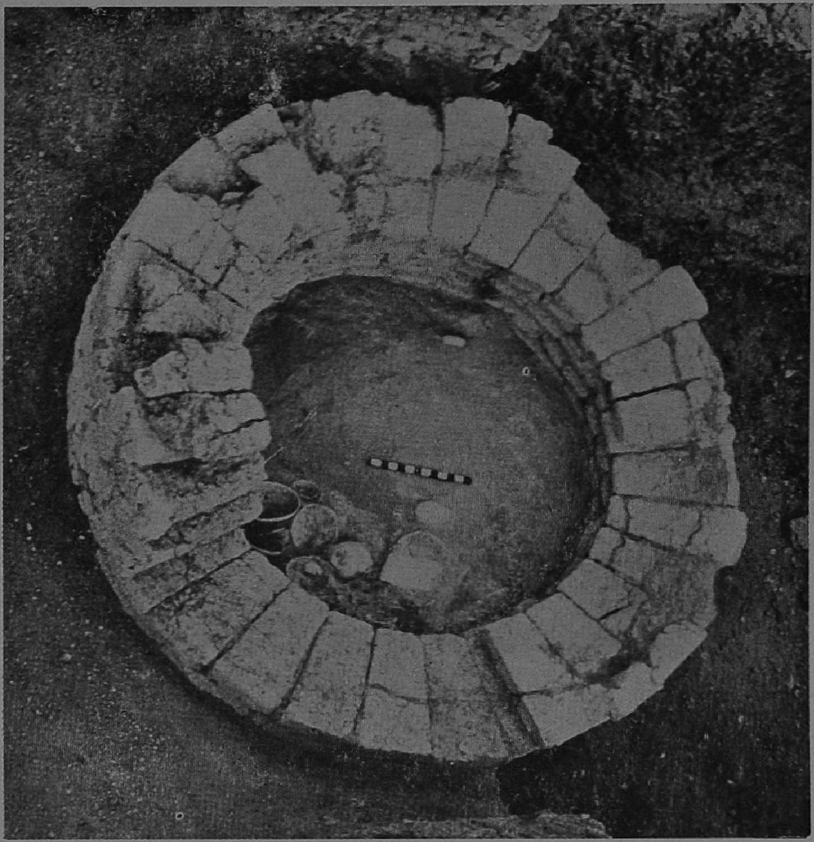
ORISSA.—The Orissa State Museum produced *Orissa Historical Research Journal,* Volume XII, No. 4 and Volume XIII, No. 1. *The History of the Gangas* and *Descriptive Catalogue of Oriya Manuscripts* are in the advanced stage of printing.

RAJASTHAN.—The next issue of *Researcher,* an official bulletin of the Department of Archaeology and Museums, Rajasthan, Jaipur, was sent to press.

TAMIL NADU.—*Mamallai,* a monograph (in Tamil) on the monuments of Mahabalipuram by R. Nagaswamy; *Raja Raja,* a brief monograph (in Tamil) on Chola king Raja Raja by Saw. Ganesan and *Inscriptions of Raja Raja in the Tanjore Temple,* edited by R. Nagaswamy, were brought out by Department of Archaeology, Tamil Nadu.

UTTAR PRADESH.—*The Bulletin of Museums and Archaeology in Uttar Pradesh* and introduction to the State Museum, Lucknow (in Hindi), were published by the State Museum, Lucknow. Besides, the Museum also brought out: (i) *Catalogue of Brahmanical sculptures,* (ii) *Catalogue of the Indo-Greek coins in the State Museum* and (iii) *Catalogue of Gandhara sculptures in the State Museum.*

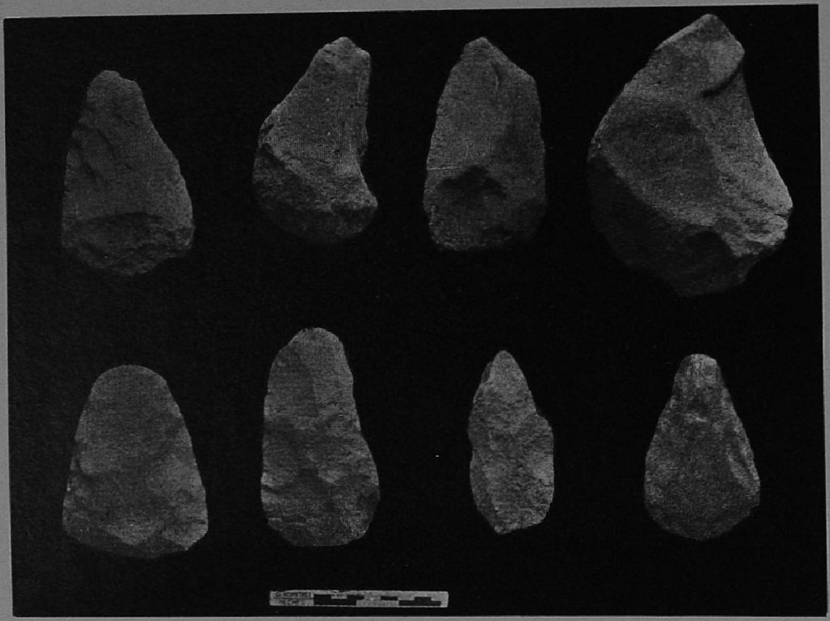
The Department of Archaeology, Uttar Pradesh, Lucknow brought out a folder on Lucknow monuments.



A

B

Peddabankur : A, *well, Period I ;* B, *terracotta seal and its impression, Period II B.* *See p. 2.*

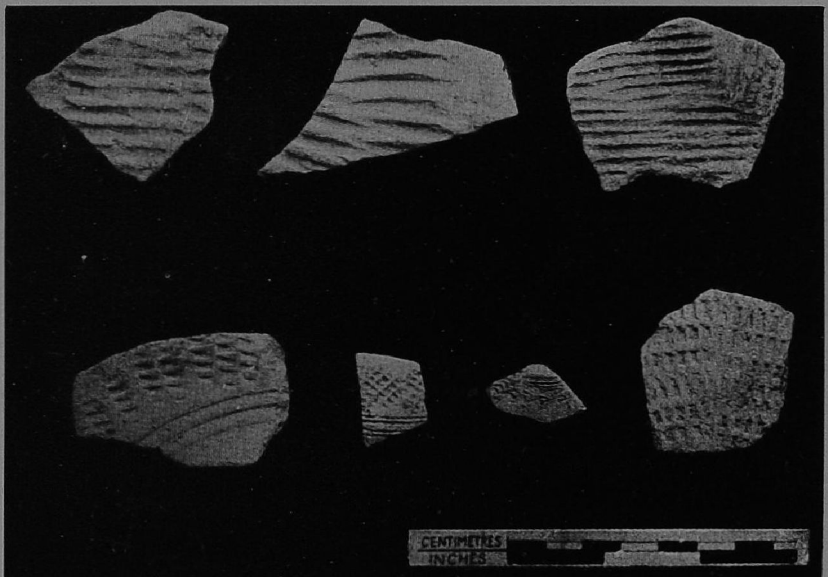


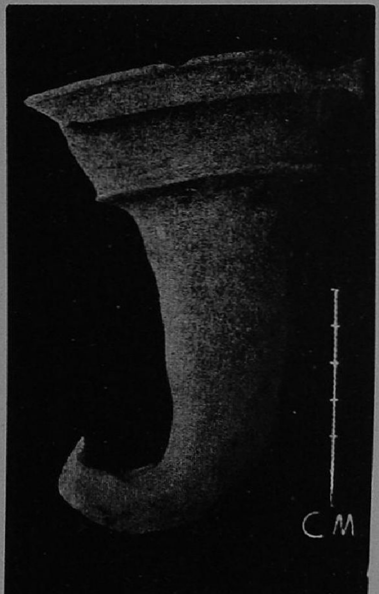
A

B

Thebronggiri : stone tools and cores. See p. 3

A





B C

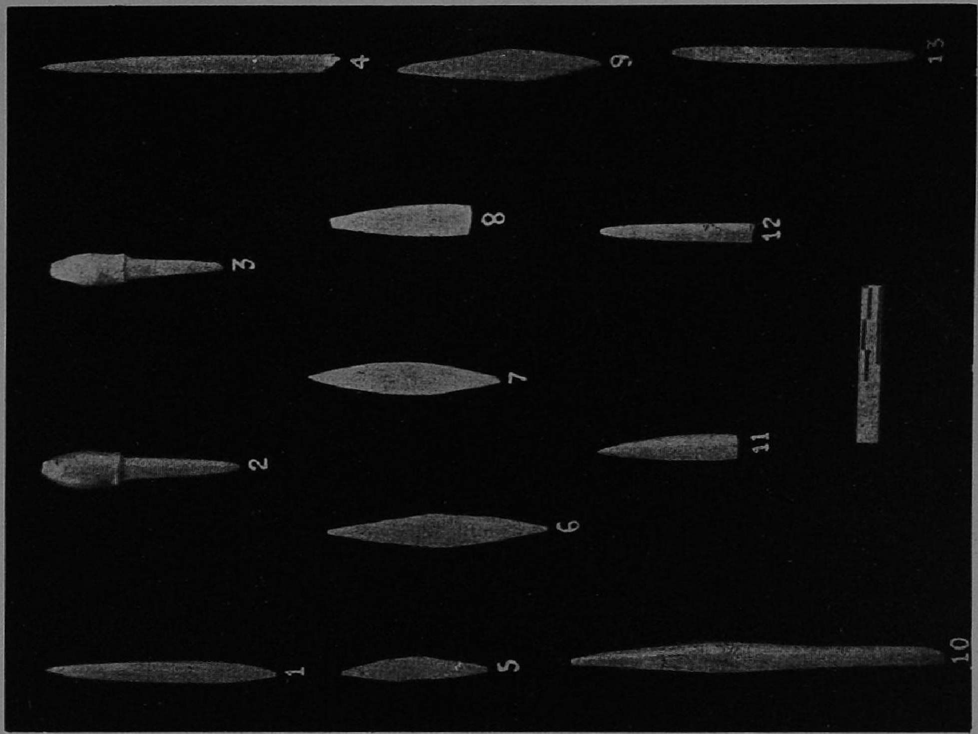
Ambari : A *and* B, *pottery with impressed designs;* C, *earthen lamp-stand.* *See pp. 3-4*

A

B

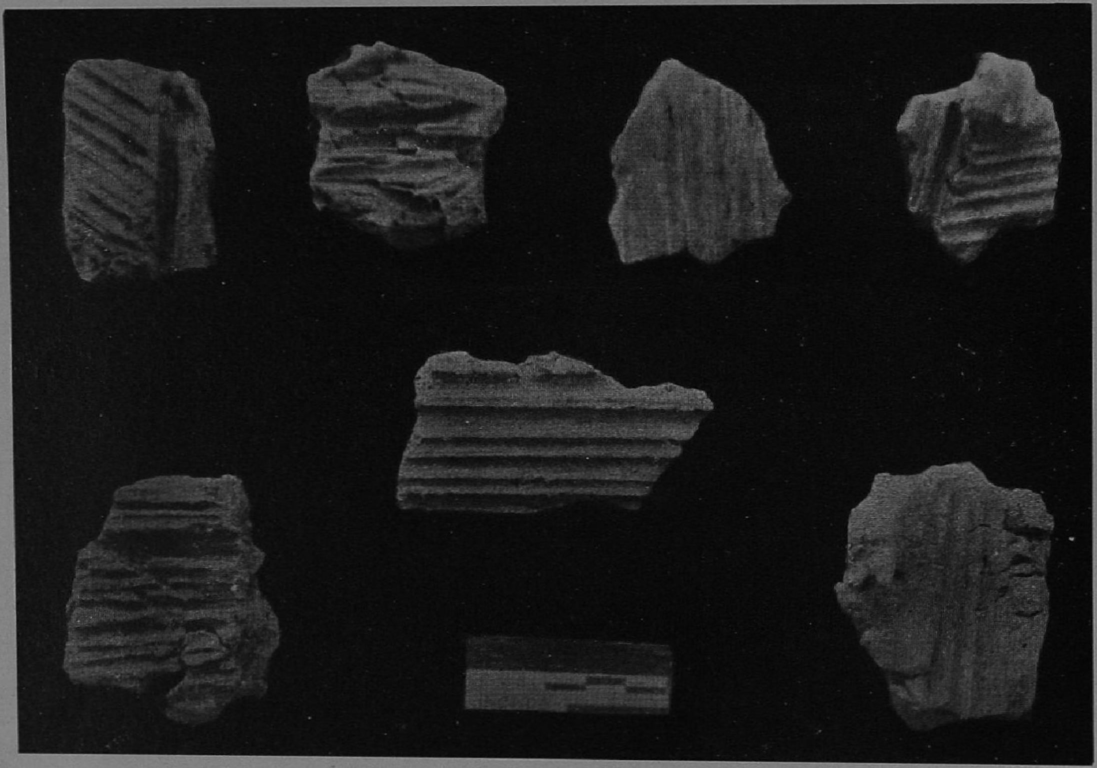
Ambari : terracotta figurines. See p. 4

A

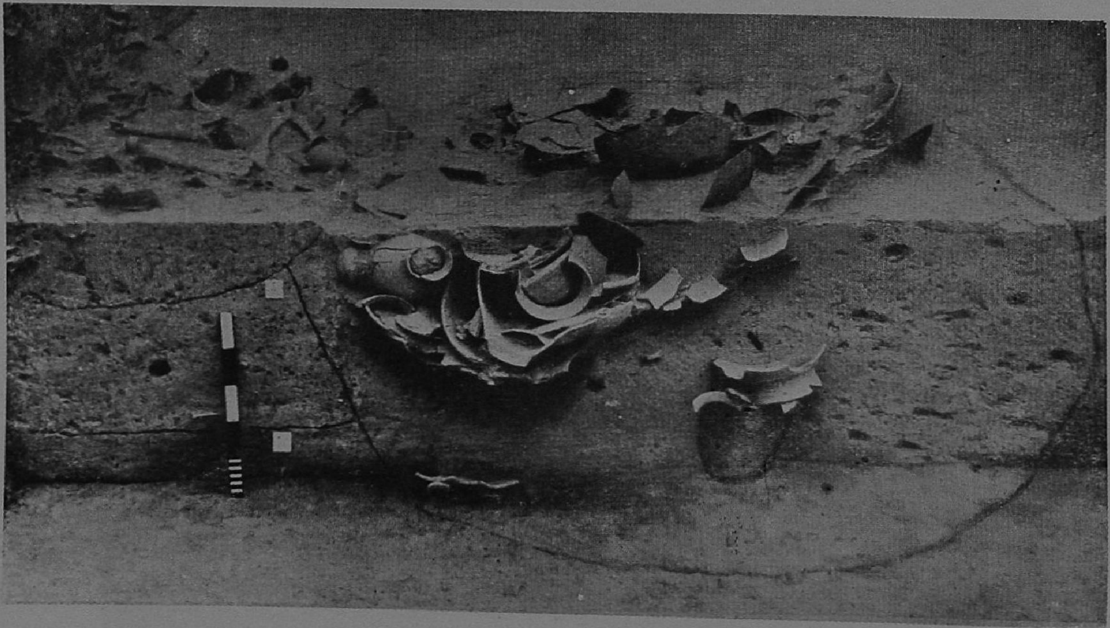


B

*Chirand : A, pottery, Period IA; B, bone arrow-heads and pins, **Periods IA** (1-9) and IB (10-13). See p. 5*



A



B

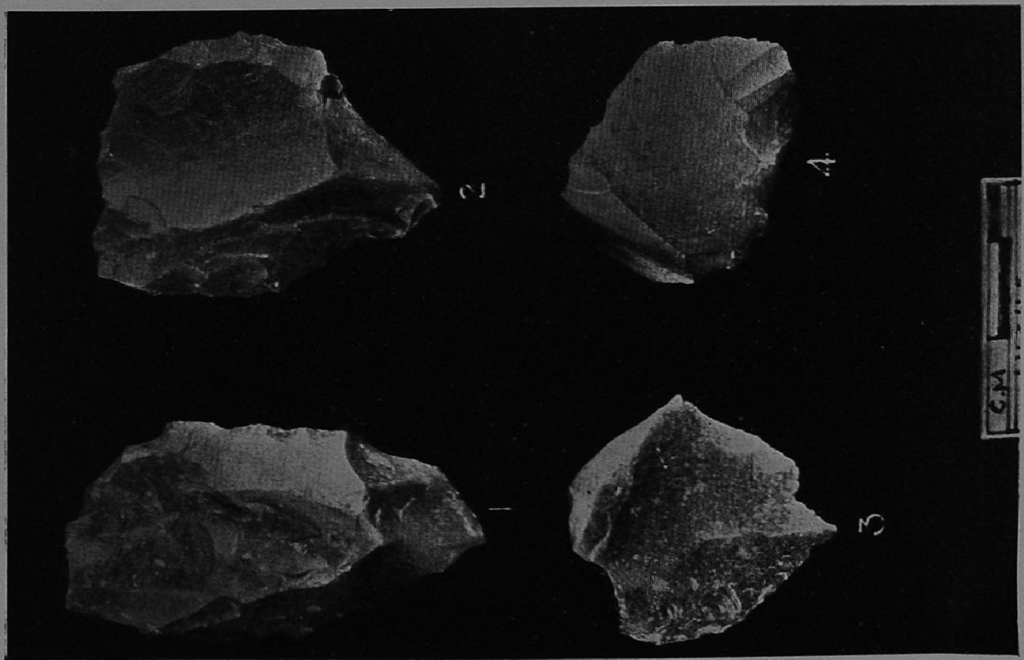
Chirand : A, *chunks of burnt clay with reed-impressions;* B, *animal burials, Periods IB and II.*
See pp. 5-6

Chirand : terracotta objects, Period III. See p. 6

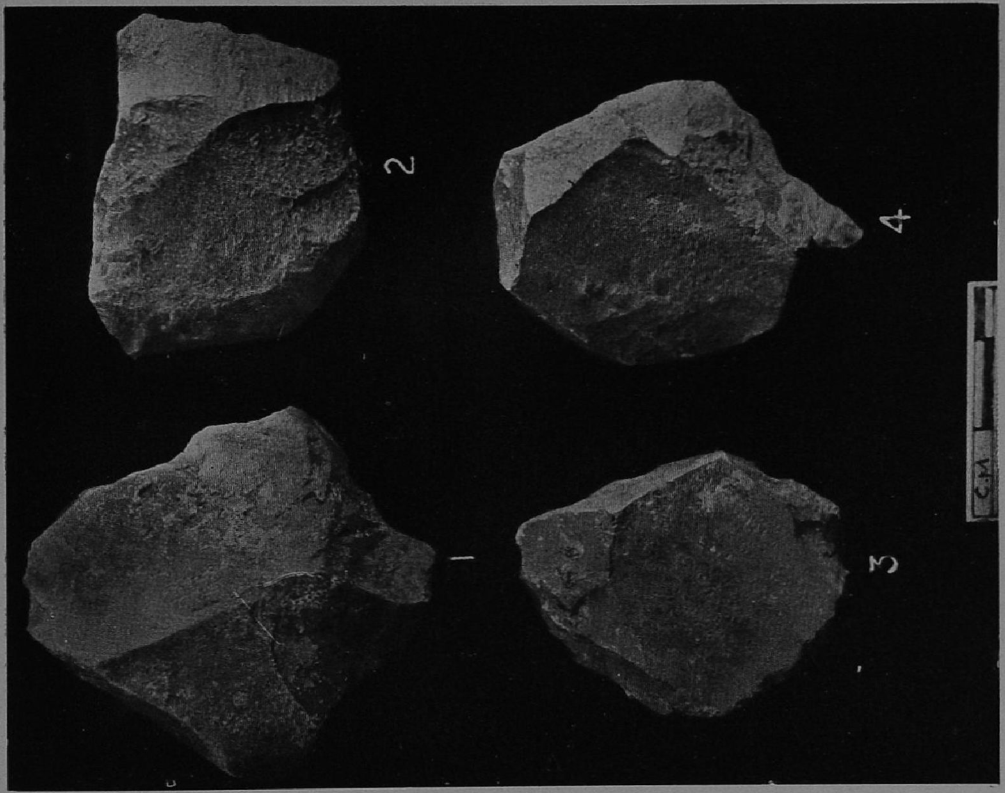
A

B

Chirand A, *coins of Gangeyadeva Kalachuri;* B, *fragments of Pala sculptures, Period IV.*
See p. 6



A



B

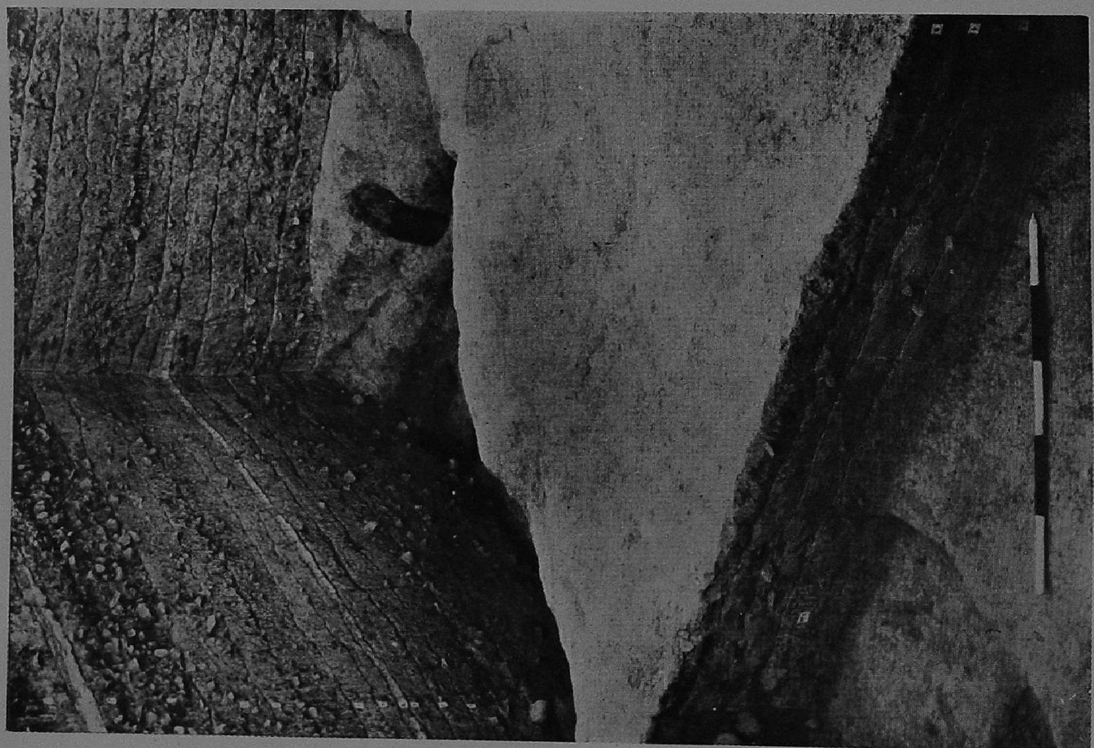
District Broach : Middle and Late Stone Age tools. A, *1 and 3, from Vadakhunta and, 2 and 4, from Rajalwada;* B, *1-3, from Vadakhunta and 4, from Rajalwada.* *See p. 7*

A

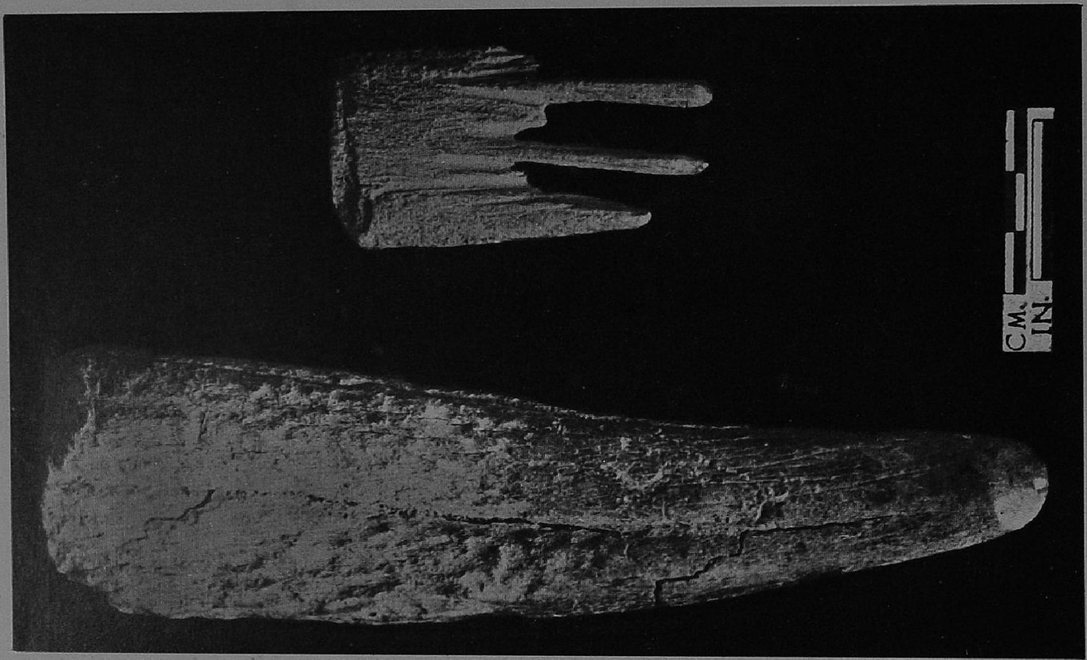
B

Palth : A, *tool-bearing terrace;* B, *mace-heads. See p. 9*

Burzahom : dwelling-pits. *See p. 10*

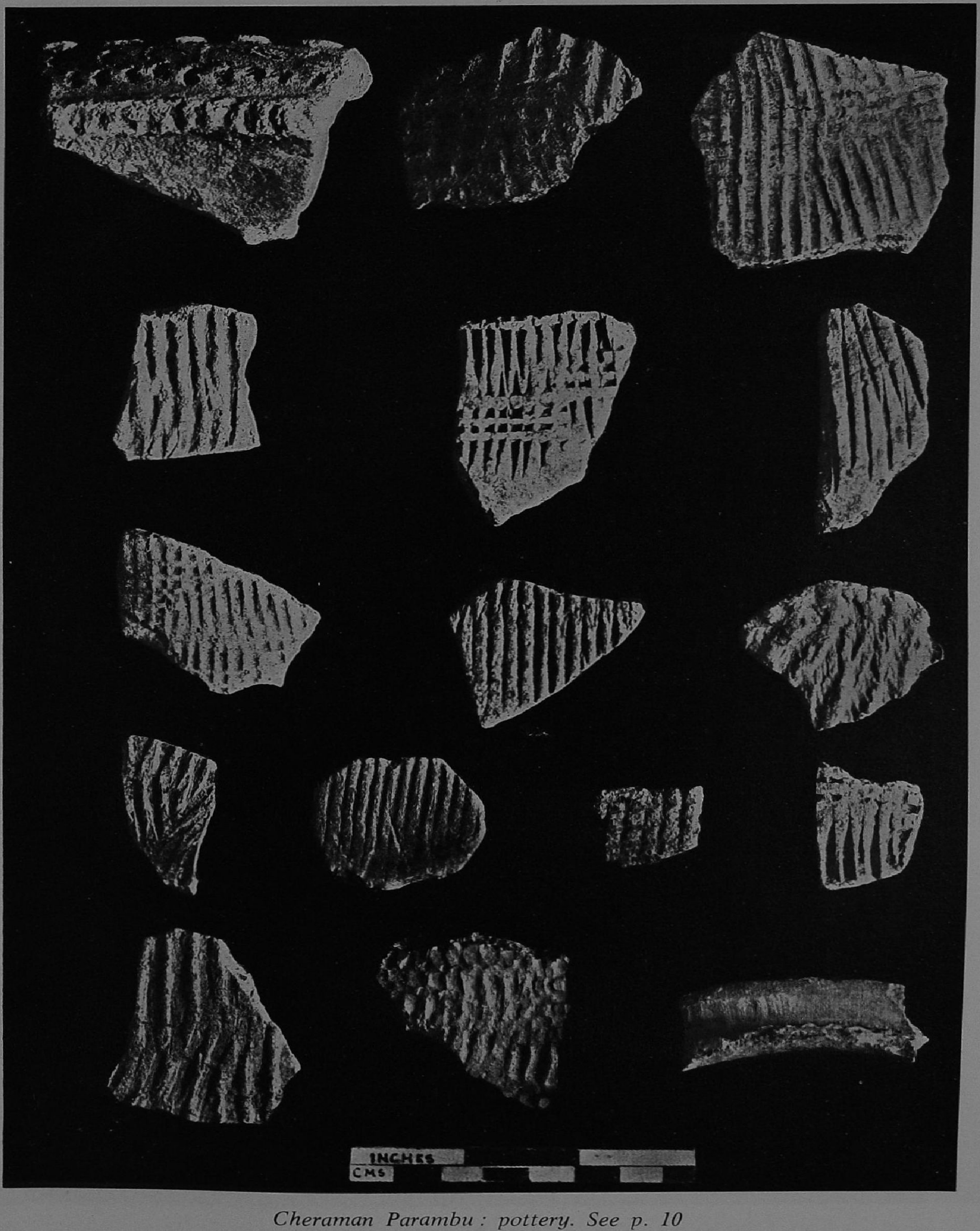


A



B

Burzahom : A, mud-platform sealing the pit-chambers; B, bone tools. *See p. 10*

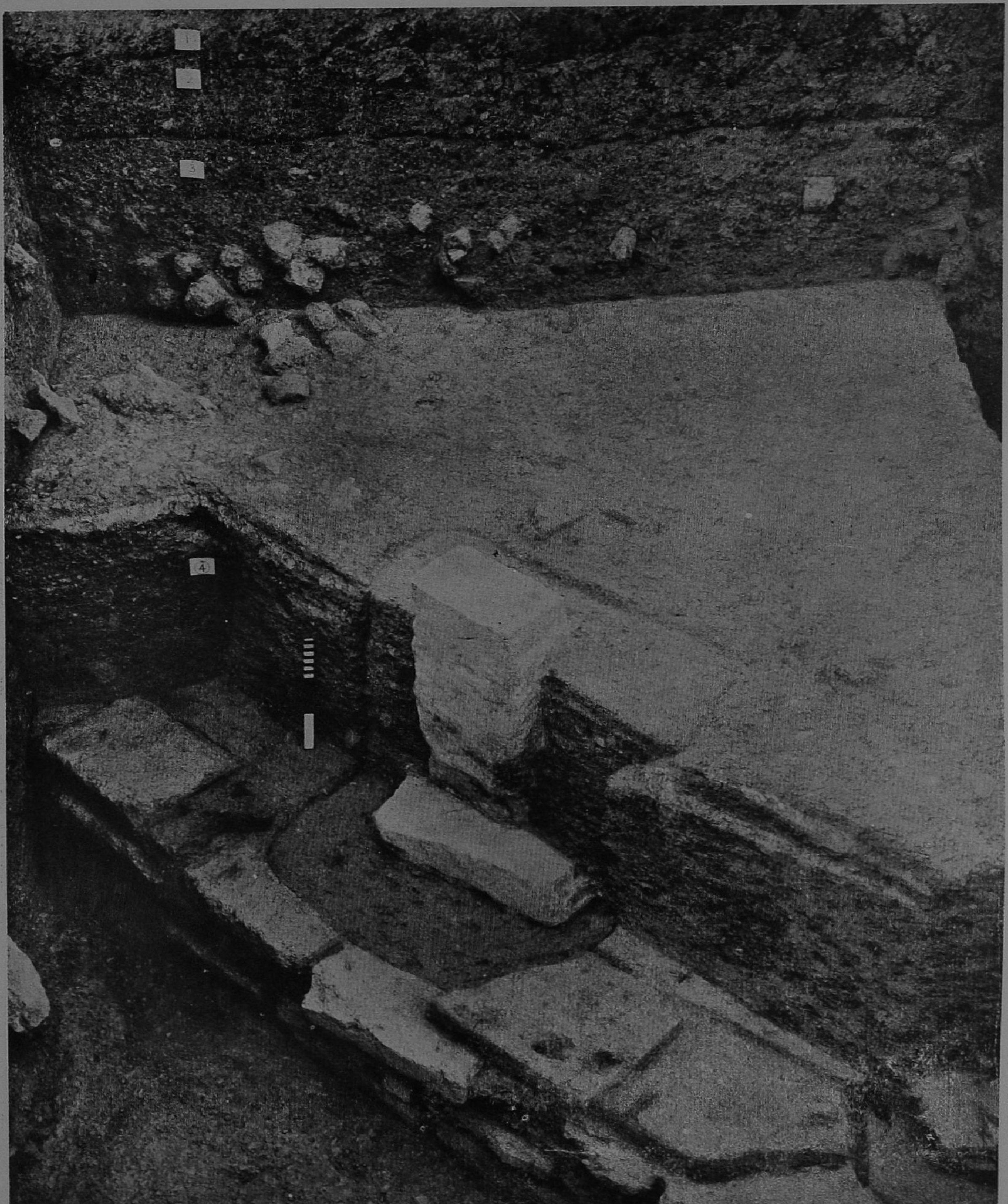


Cheraman Parambu : pottery. *See p. 10*

A

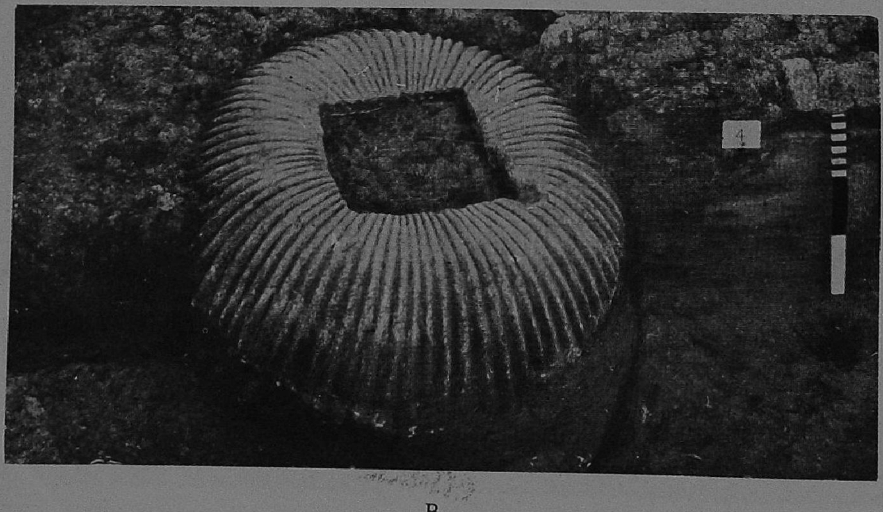
B

Pauni : A, *post-holes for wooden railing* B, *five-course wall around the stupa.* *See p. 14*



Pauni: stone post over brick-wall. See p. 15

A



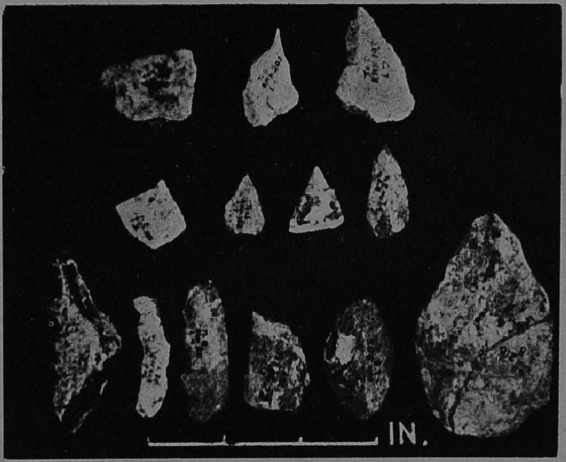
B

Pauni : A, *carved medallion on coping stone;* B, *fluted pillar-capital.* *See p. 15*

B

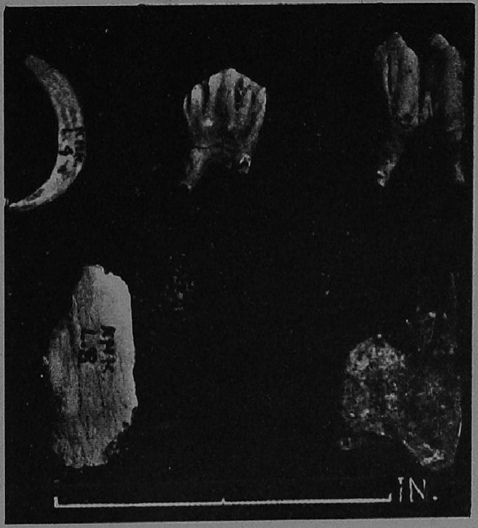
A

Pauni : A, *Naga-Muchalinda flanked by worshippers on a railing-post;* B, *inscription recording donation.* *See p. 15*

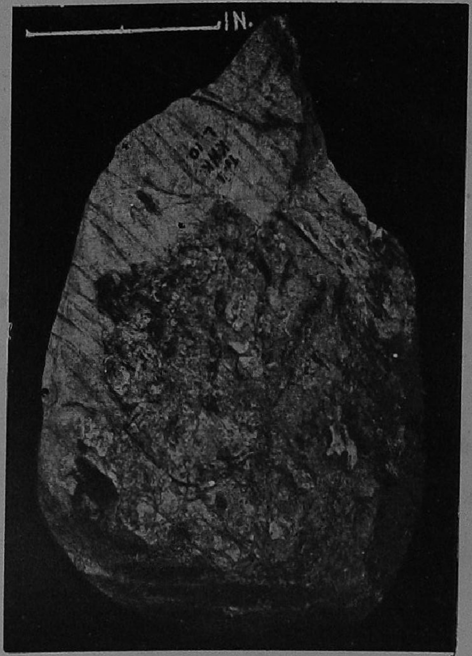


A

B

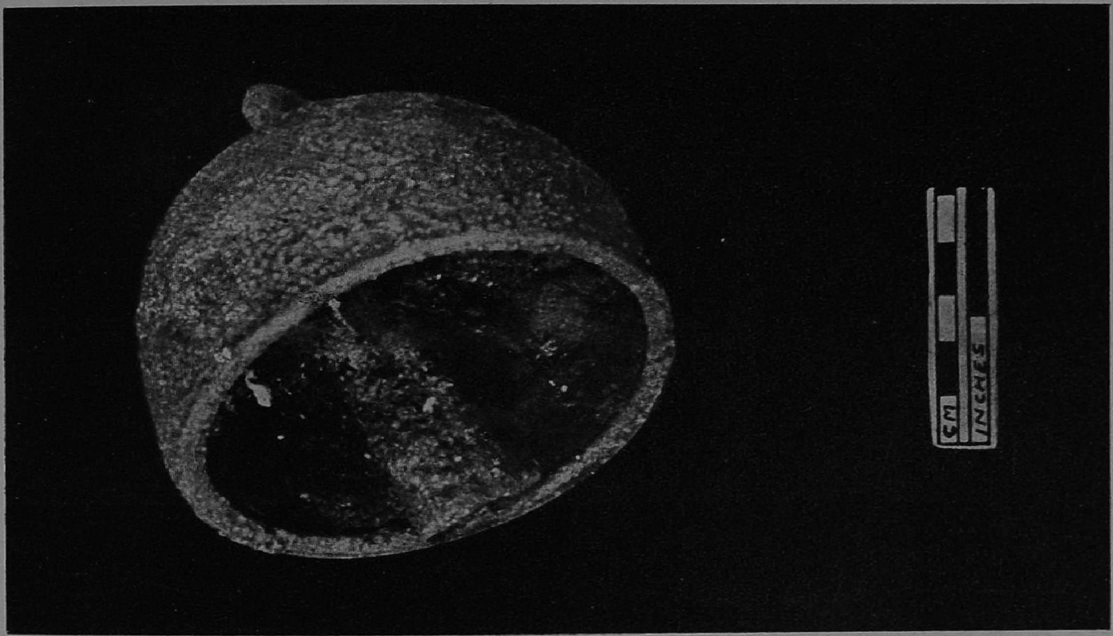


C

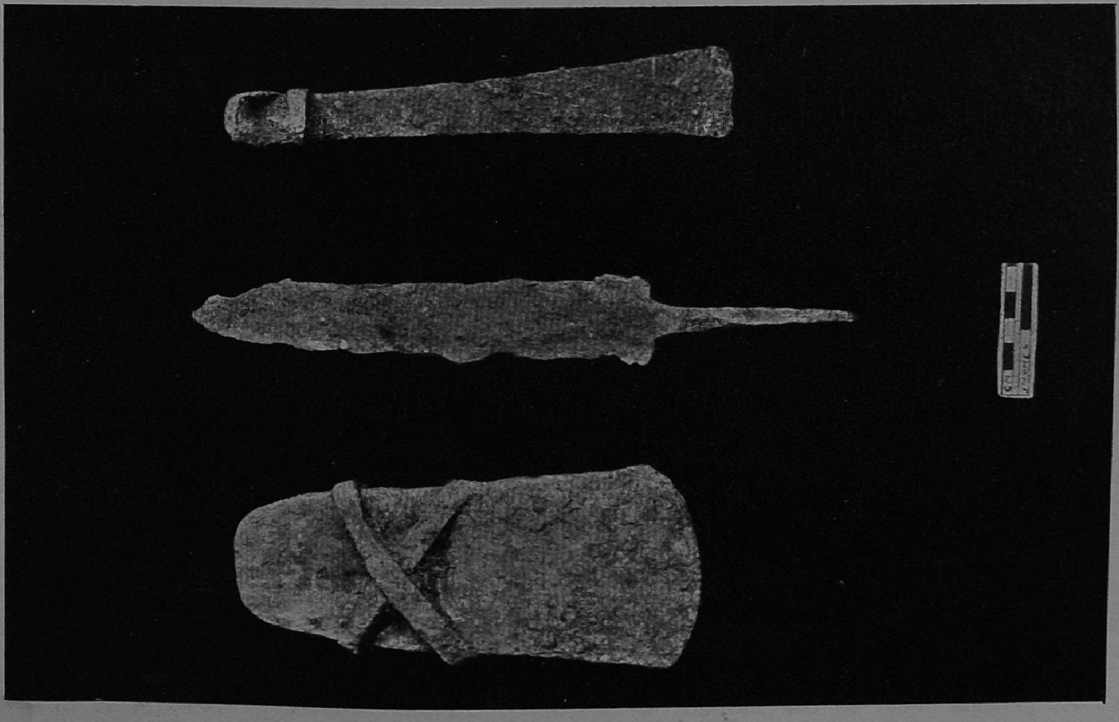


D

Khangkhui : stone tools and other objects from the rock-shelter. *See p. 20*



B



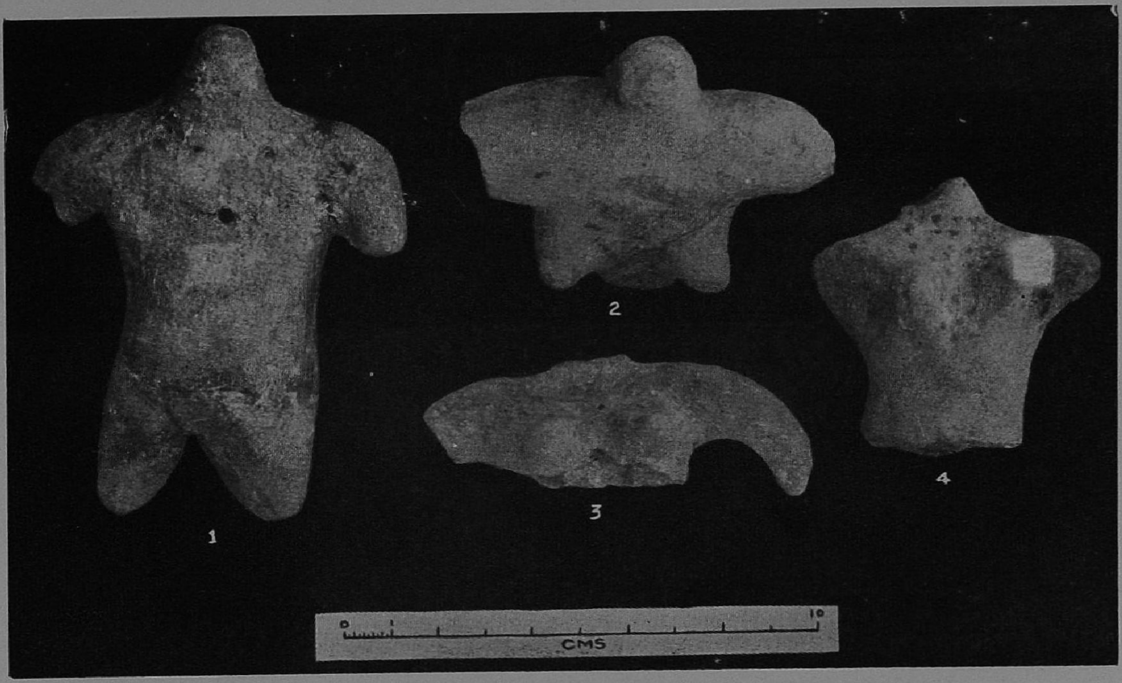
A

Khapa : A, *iron implements*; B, *bell-shaped copper vessel*. *See p.* 17

A

B

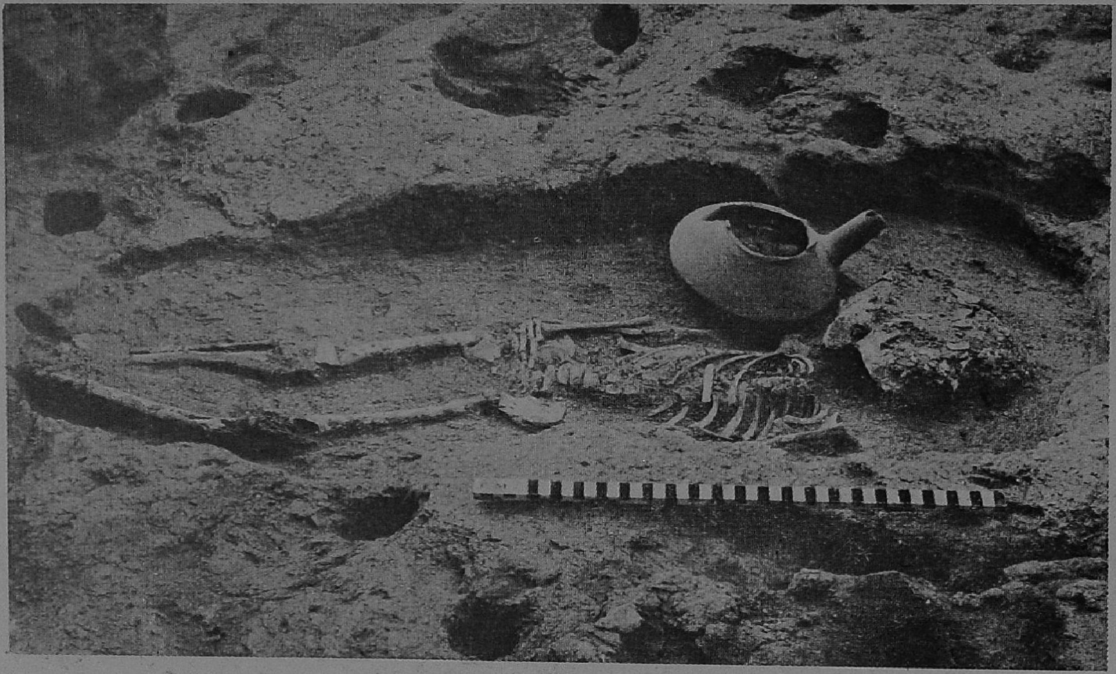
Inamgaon : A, *general view of the mound;* B, *circular house-plan, Period II. See pp. 18 and 19*



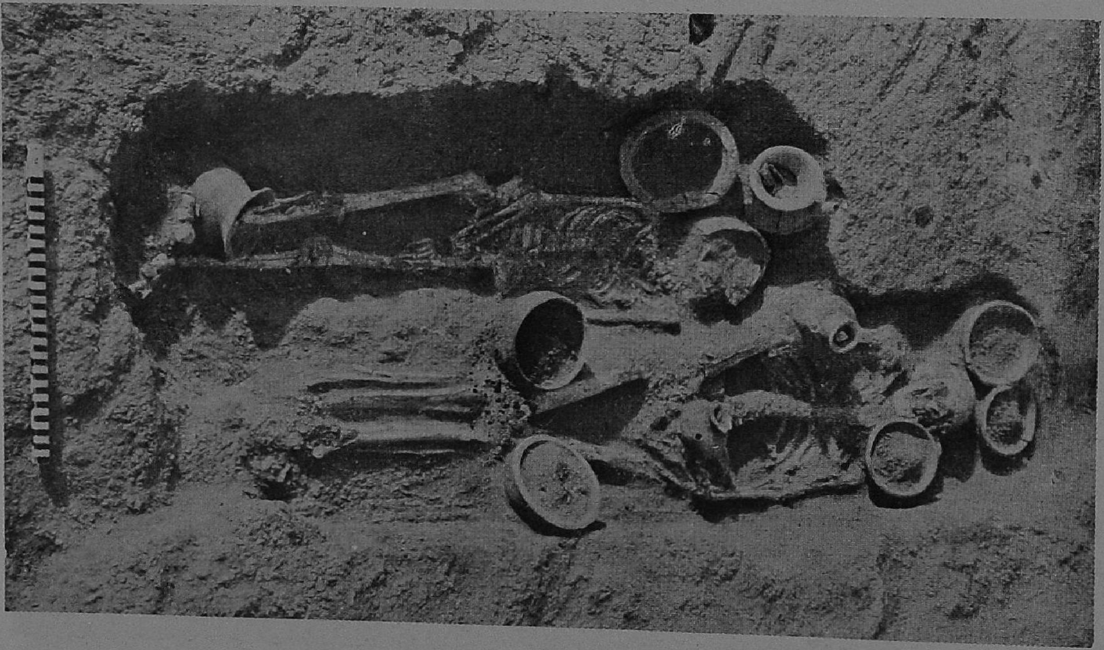
A

B

Inamgaon : A, *terracotta figurines* (*mother goddesses?*); B, *polished stone tools. See p. 19*



A

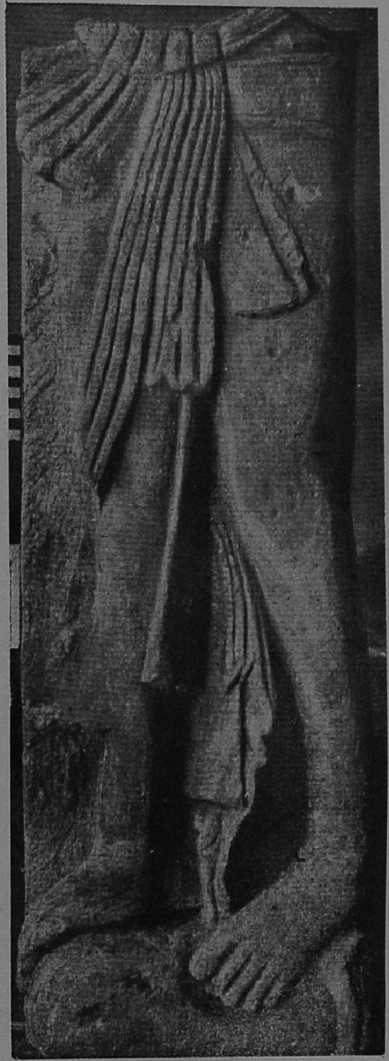


B

Inamgaon : extended burials, Period II. See p. 20

A

B



C

Pauni : sculptured human figures on railing pillars. *See p. 15*

A

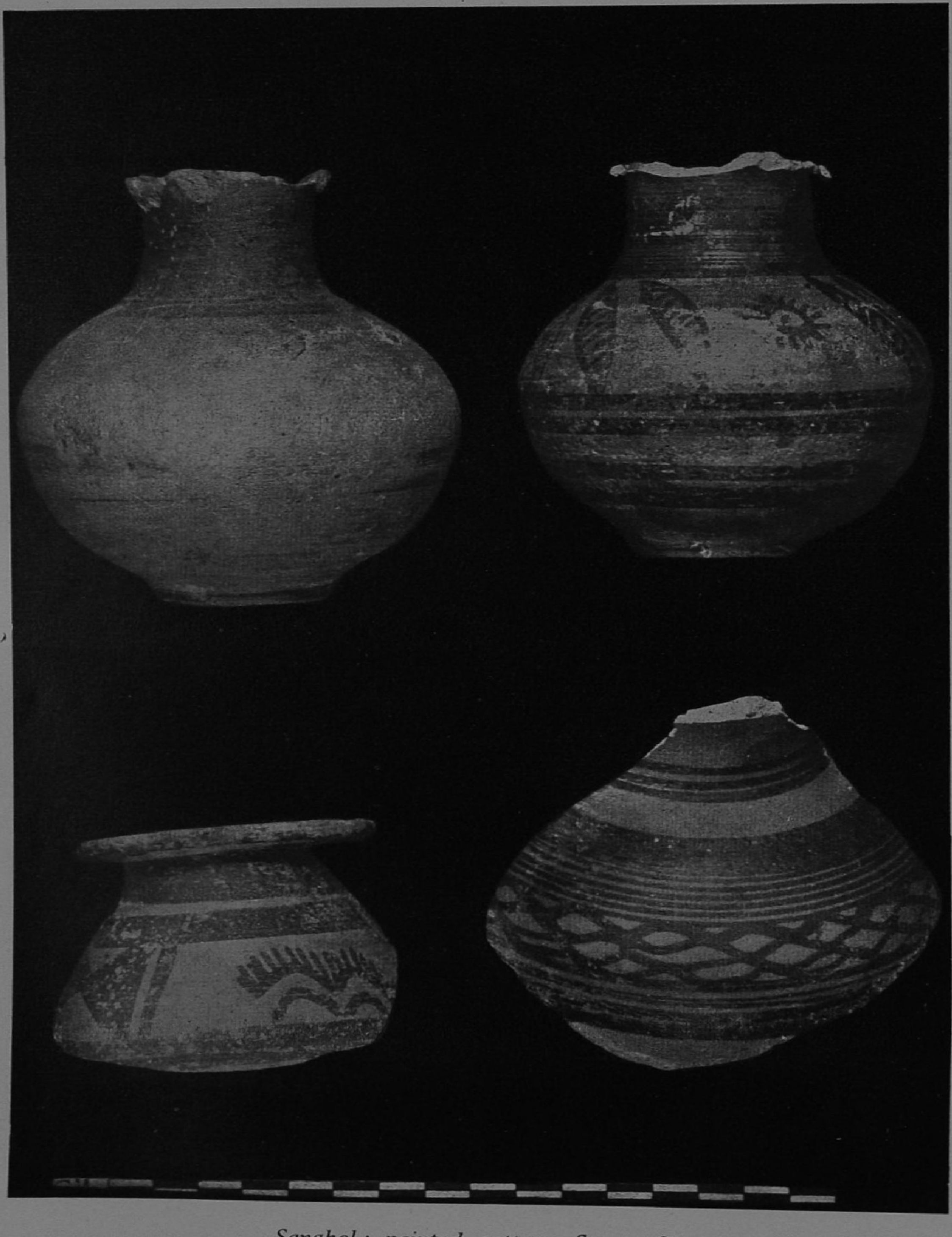
B

Hunur : A, *megalith with intact capstone, before excavation;* B, *the same as above, after excavation, showing cist-tombs.* *See p. 21*

A

B

Hunur: closer view of cist-tombs showing passages. *See p. 21*



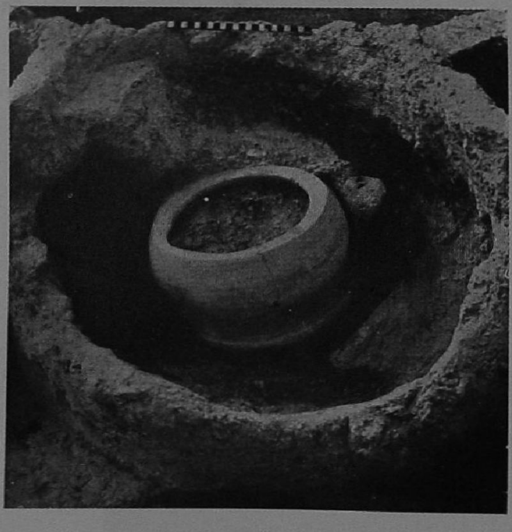
Sanghol: painted pottery. *See p. 25*

A

B

Sanghol : painted pottery. *See p. 25*

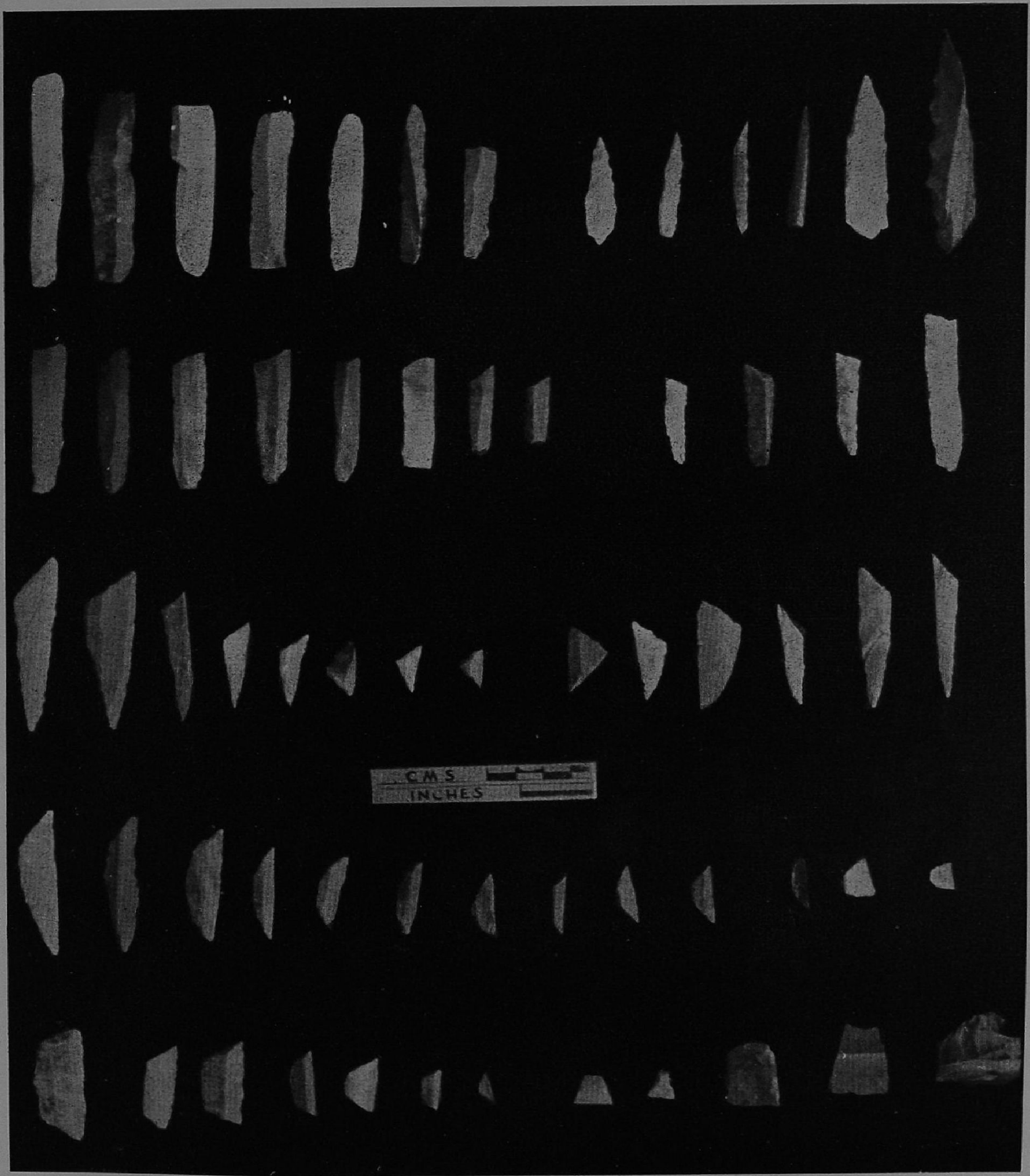
A



B

C

Sanghol : A, *corn-bins, Period I;* B, *pot within a corn-bin, Period I;* C, *a Buddha figure from the surface.* *See pp.* 25 *and* 26

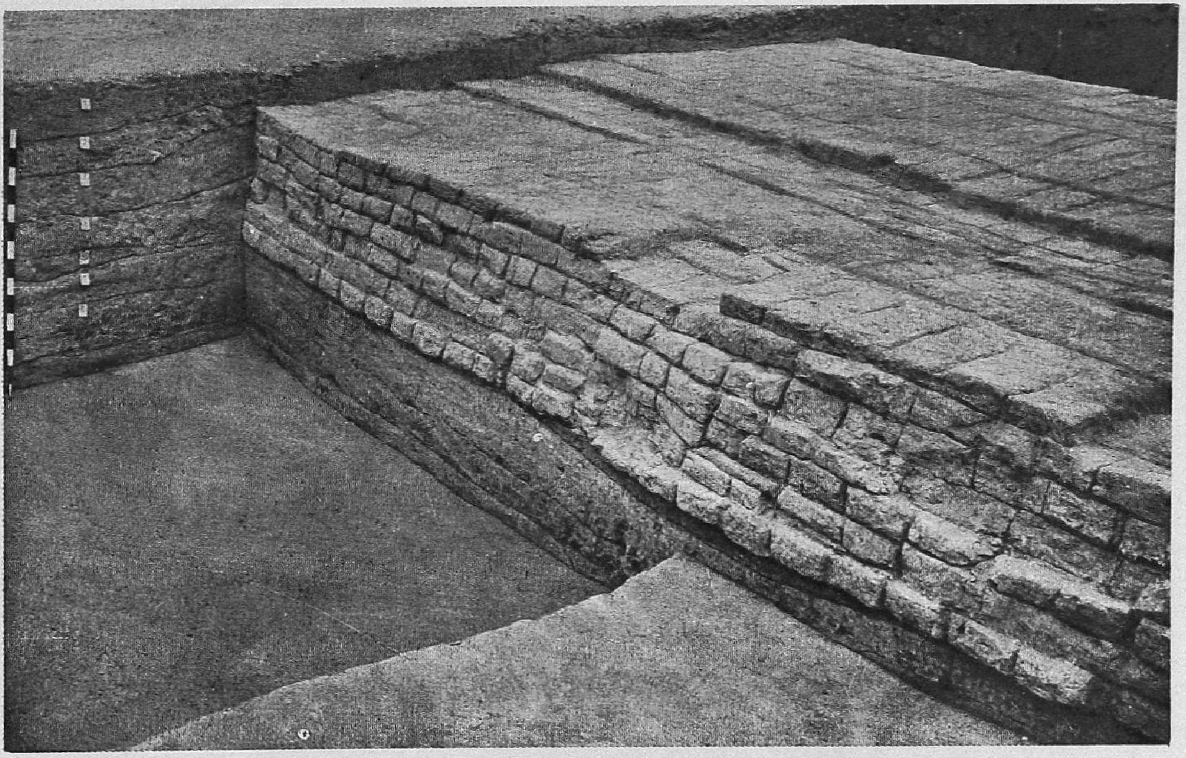


Bagor : microliths. See p. 27

A

B

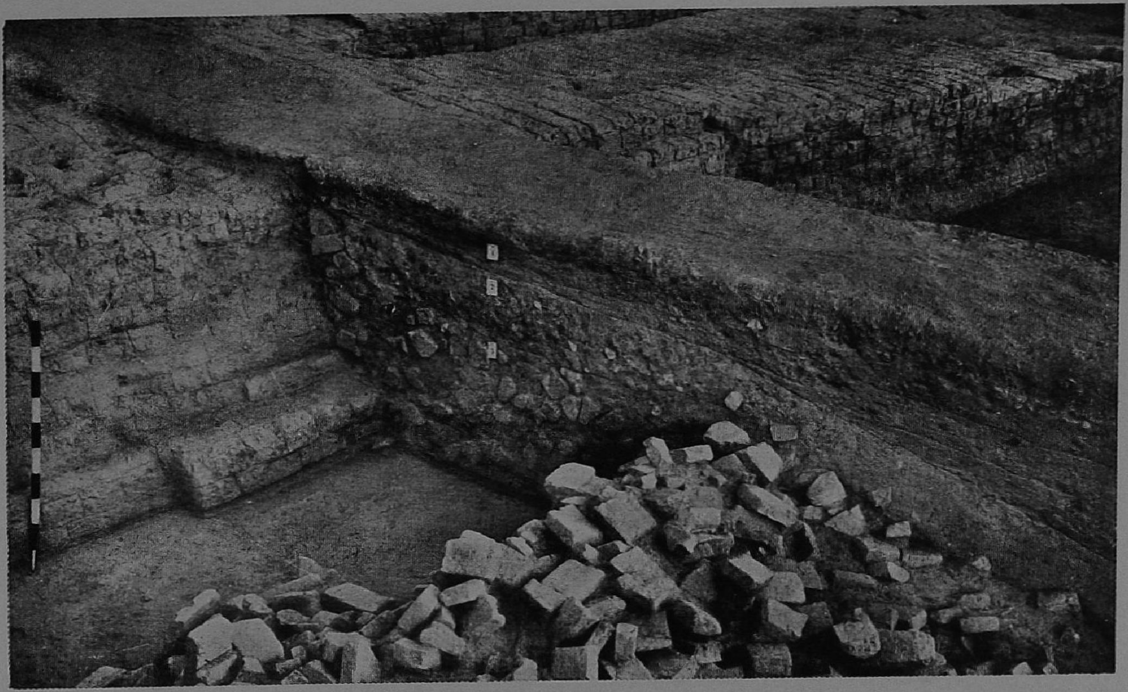
Bagor : A, *flexed human burial, Phase II*; B, *copper objects found inside the graves.* *See p. 27*



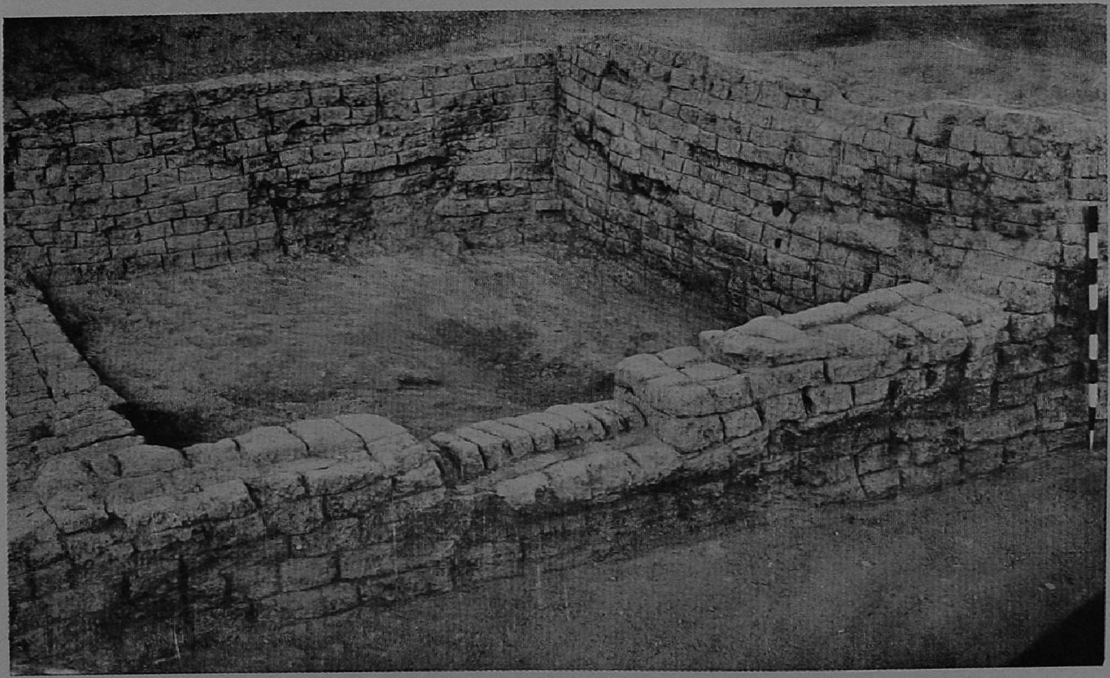
A

B

Kalibangan : KLB-2, excavated area in the north-western part of the city. 'A' indicates the eastern flank of the northern gateway. *See p. 29*



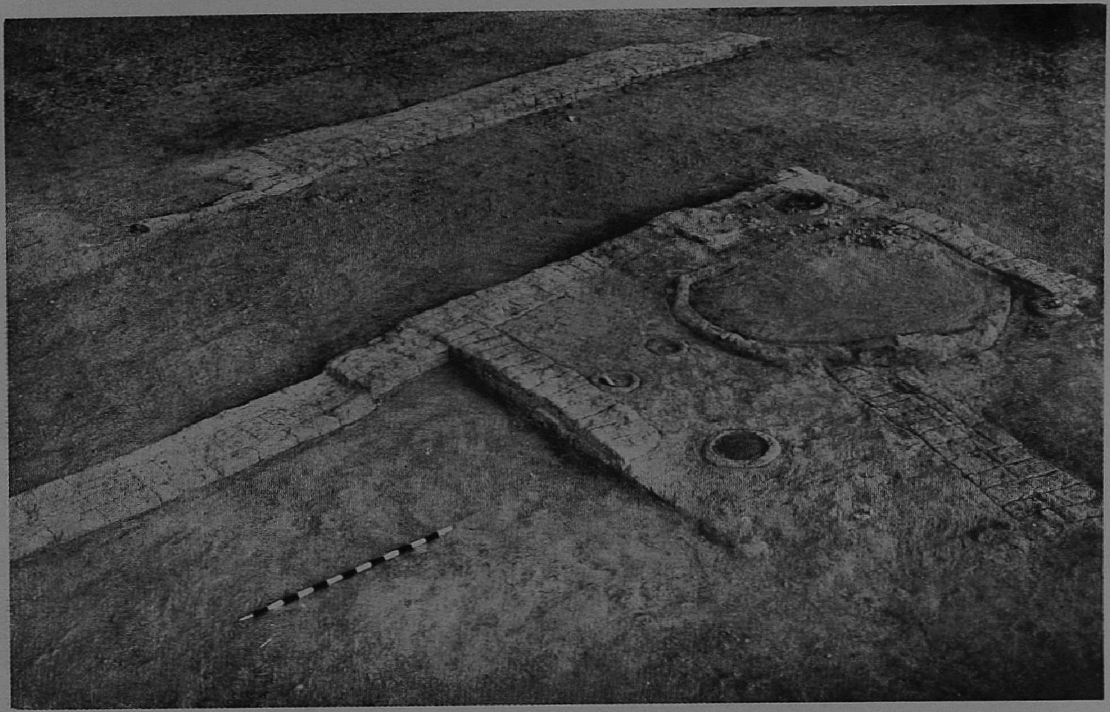
A



B

Kalibangan : KLB-2, A, *view of the fortification wall on the western periphery of the mound, with a dump of baked bricks in the foreground, and* B, *room with a threshold. See p. 29*

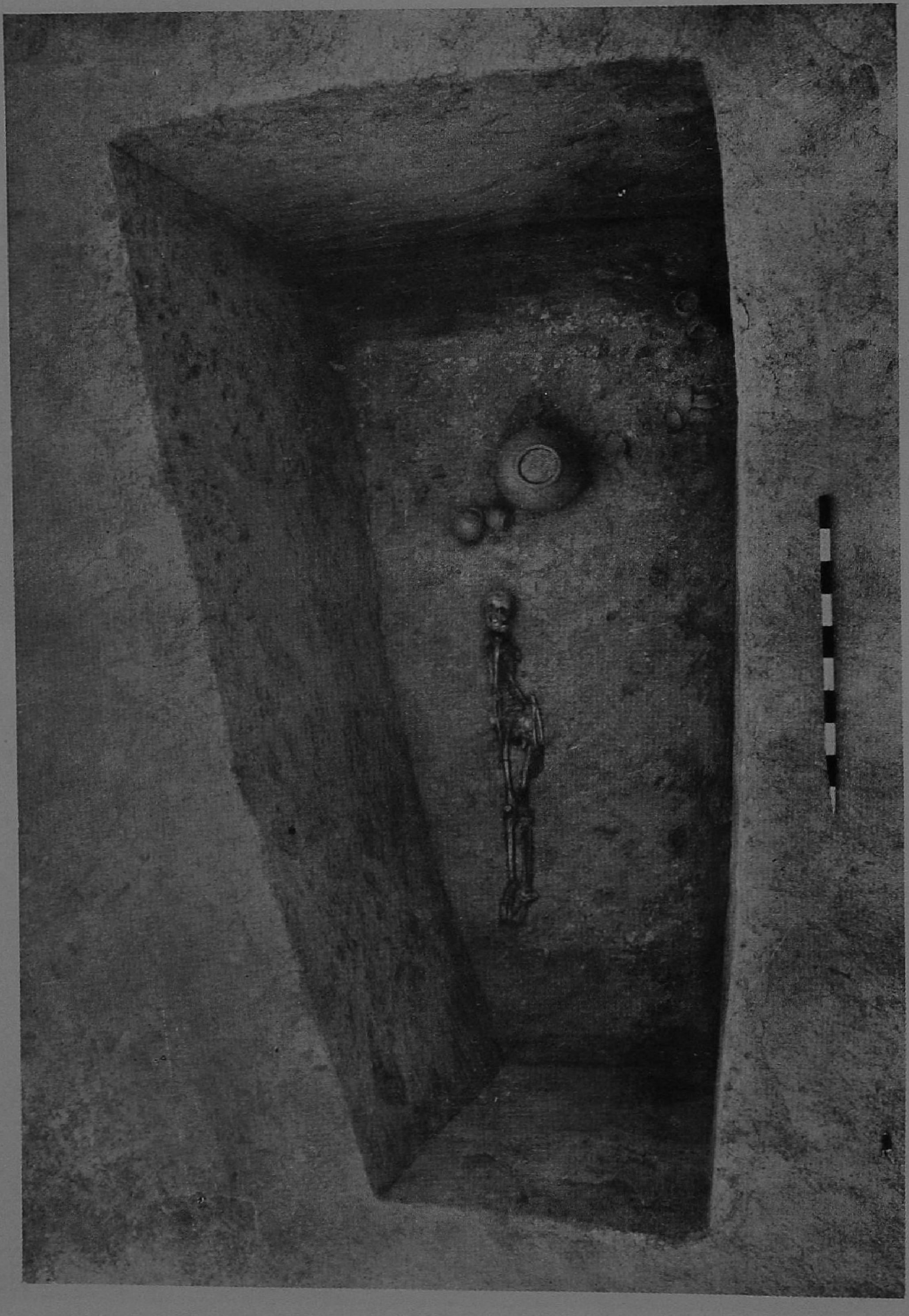
Kalibangan : KLB-2, part of a ploughed field, Pre-Harappan Period. *See p.* 29



A

B

Kalibangan : A, *KLB-3 'fire-altars' inside a room;* B, *KLB-8, Grave 32 showing alternate bands of fine sand and clay deposited after the interment of pottery.* *See p. 31*



Kalibangan : KLB-8, Grave 34, an extended inhumation burial. *See p. 31*

Kalibangan : KLB-8, Grave 33, containing only pottery and other grave-goods. *See p. 31*

Kalibangan: KLB-8, Grave 32, showing two interments. See p. 31

A

B

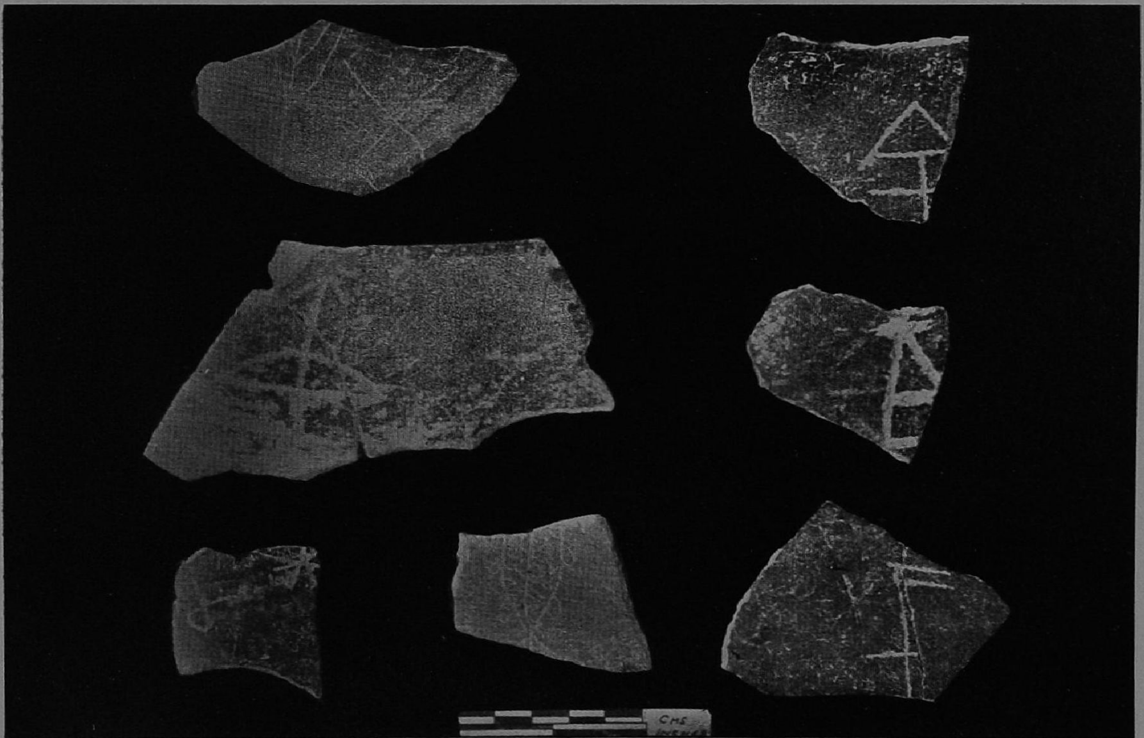
Kalibangan : KLB-8, pot-burials. See p. 31

A

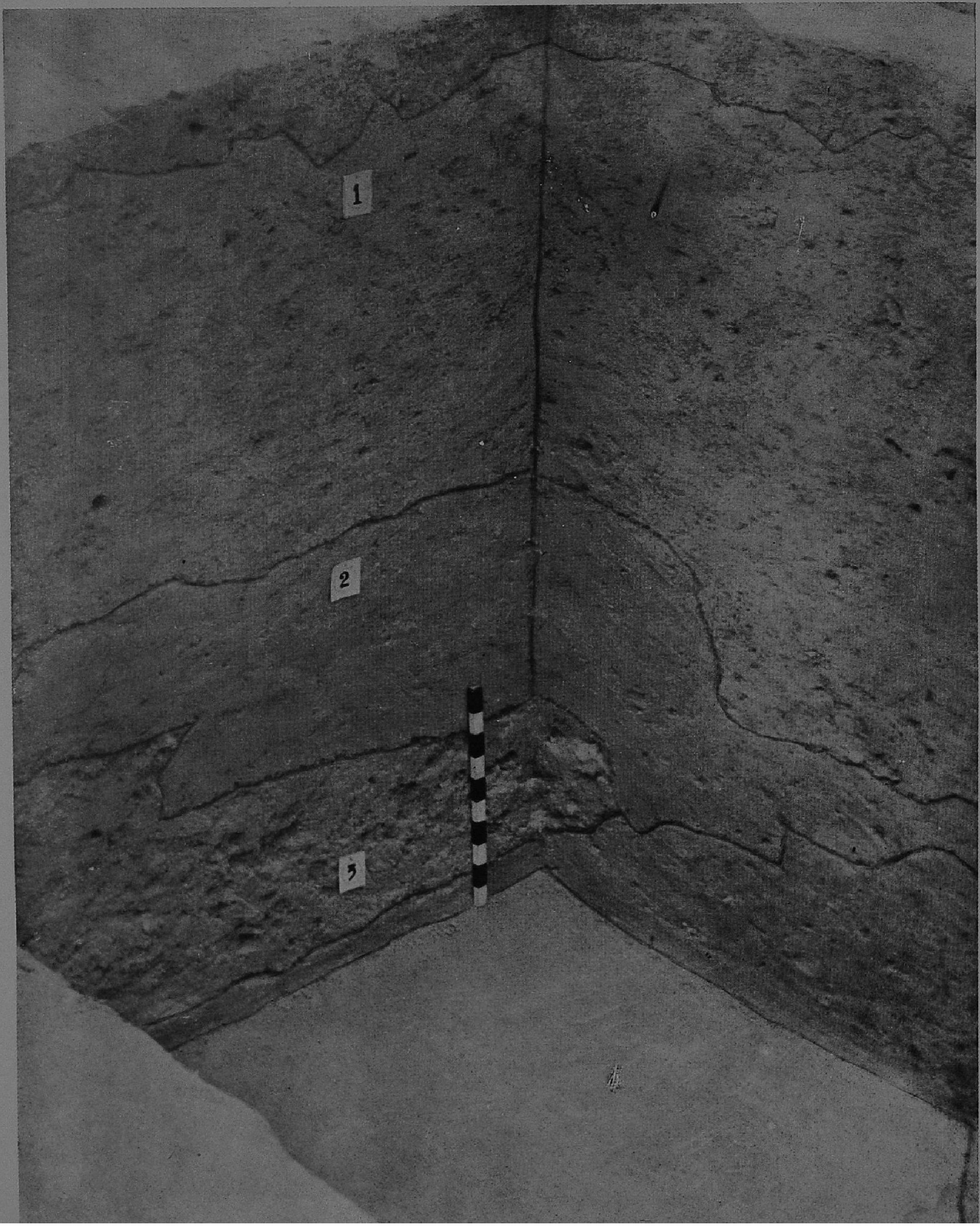
B

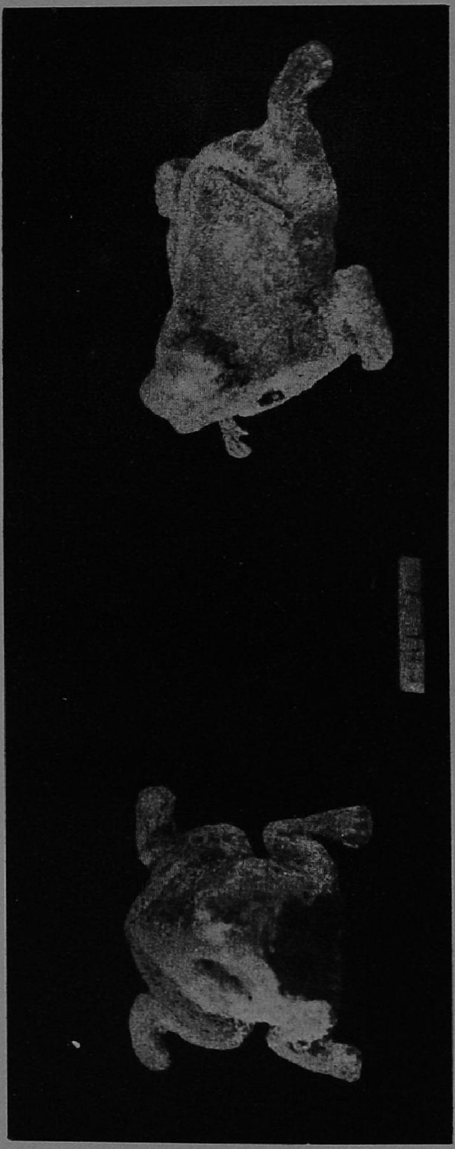
Korkai: A, *brick-platform with a flight of steps;* B, *a terracotta torso and pottery.* *See p. 33*

A



B


1
2
3

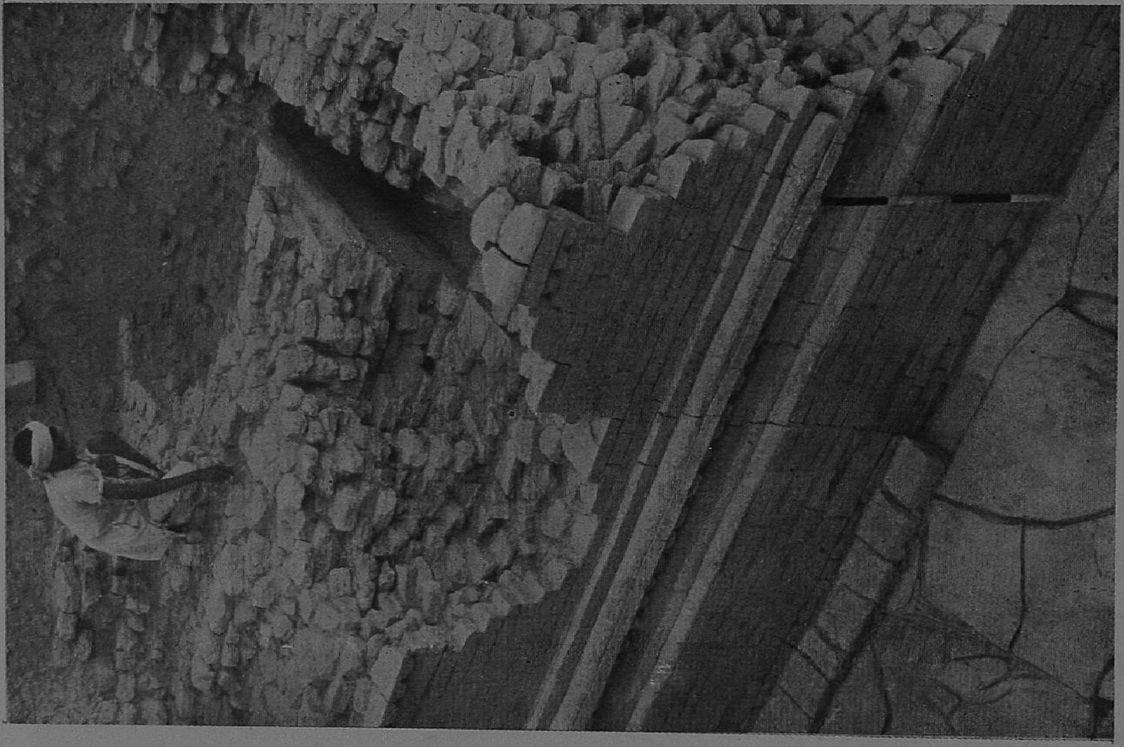


A

B

Atranjikhera : A, *copper frogs;* B, *terracotta animal figurines.* *See p.* 38

A



B

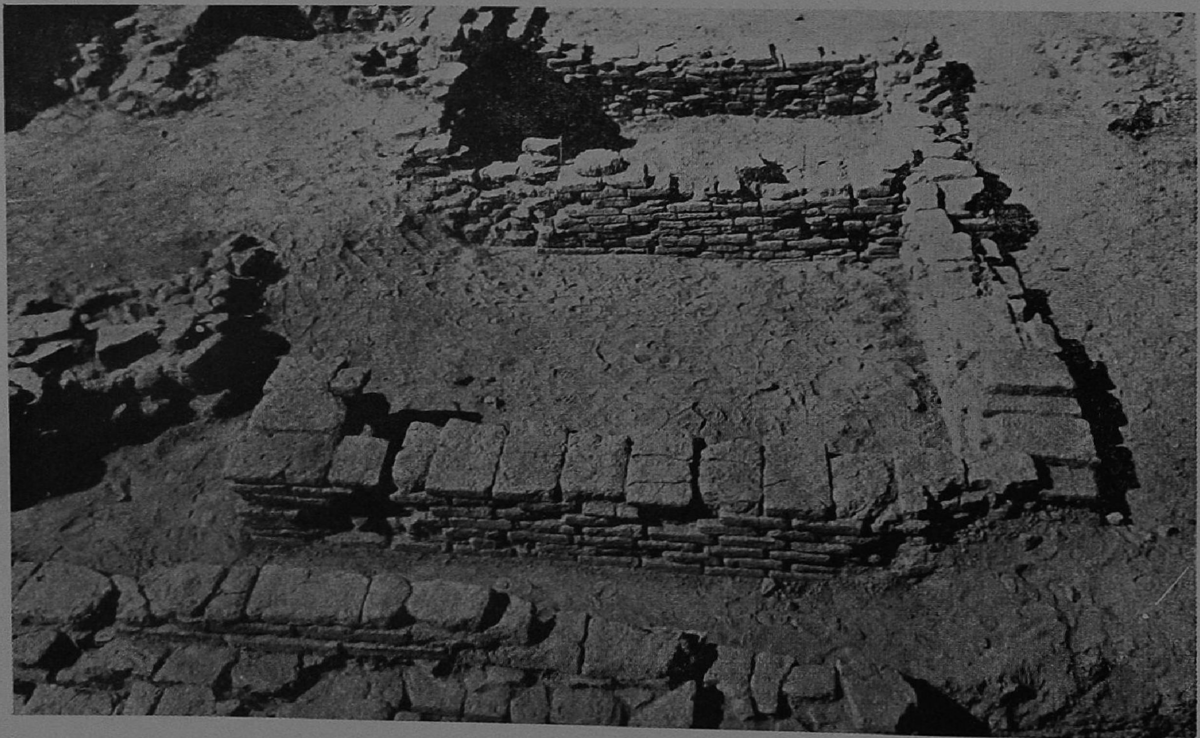
Bhitari : A, *general-view of walls of the temple-complex;* B, *southern elevation of the temple-complex. See p. 38*

Bhitari : sandstone panel showing a scene from Krishna's life. *See p. 38*

Bhitari : general view of the shrine. *See p. 39*

Bhitari : terracotta figurines. See p. 39

A



B

Sonkh: A, medieval structural remains; B, late Kushana structure. See p. 40

A

B

C

D

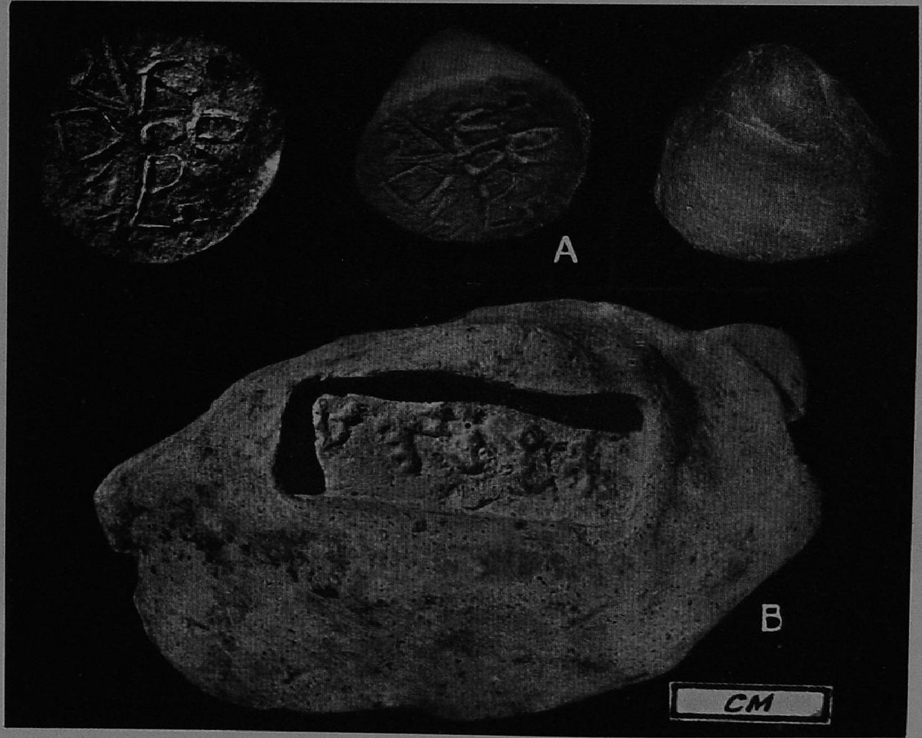
Sonkh : A, *early Sunga terracotta human figure;* B, *terracotta beak-nosed human figure;* C, *inscribed sealing;* D, *decorated bowl-on-stand.* *See p. 40*

A

B

Rajbadidanga: structural remains. *See p. 43*

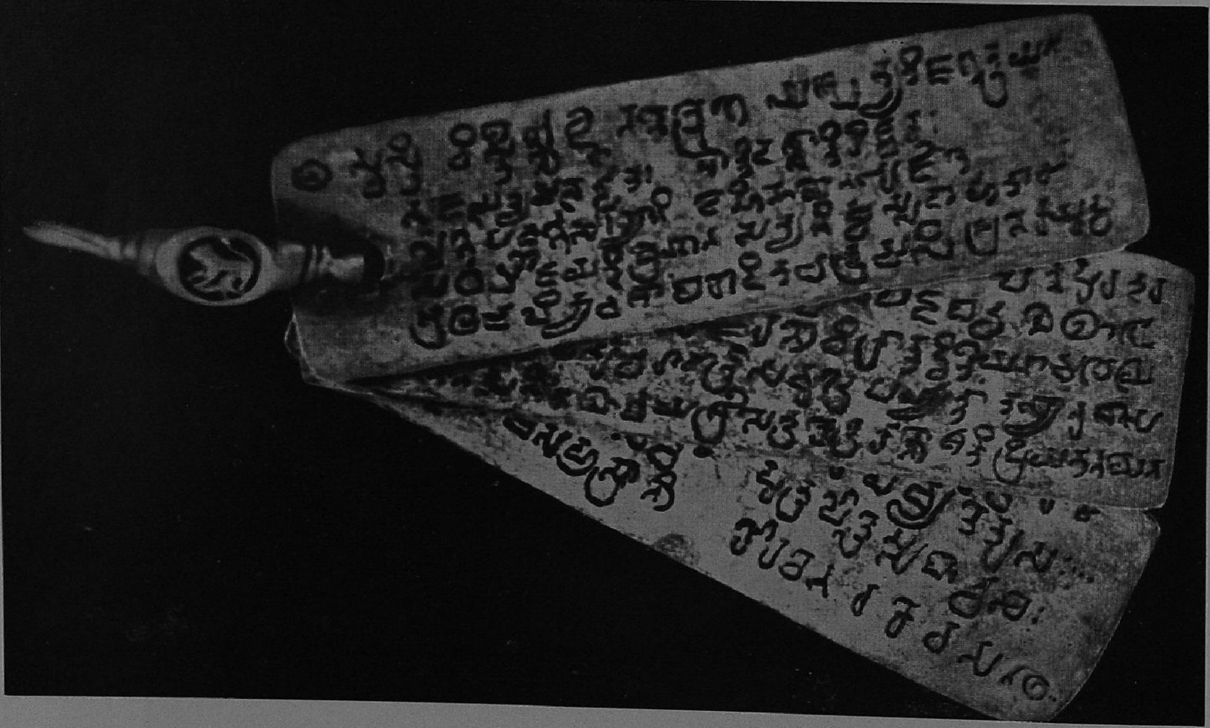
A



B

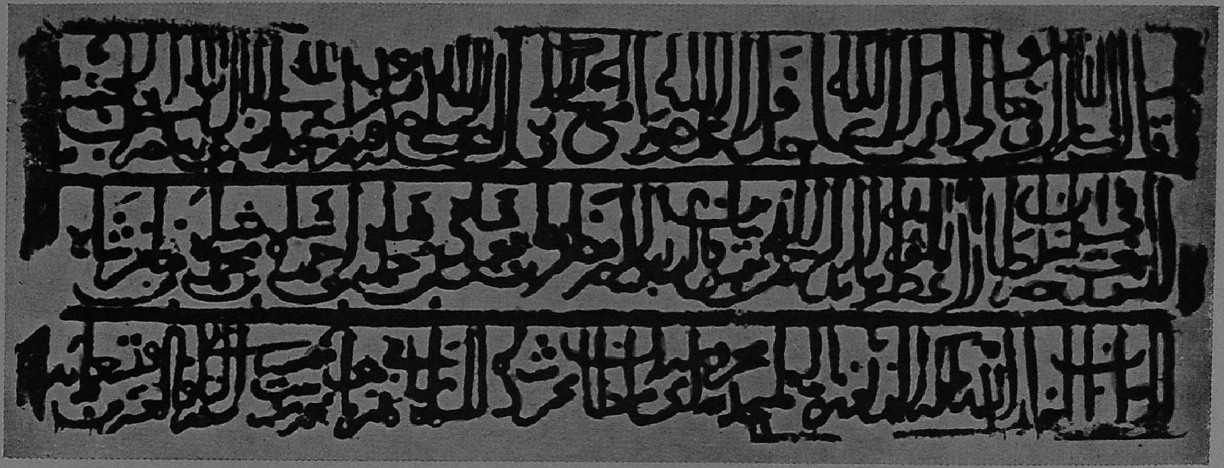
Rajbadidanga: A, *structural remains of three different periods*; B, *terracotta seals and sealings*. *See p. 43*

A

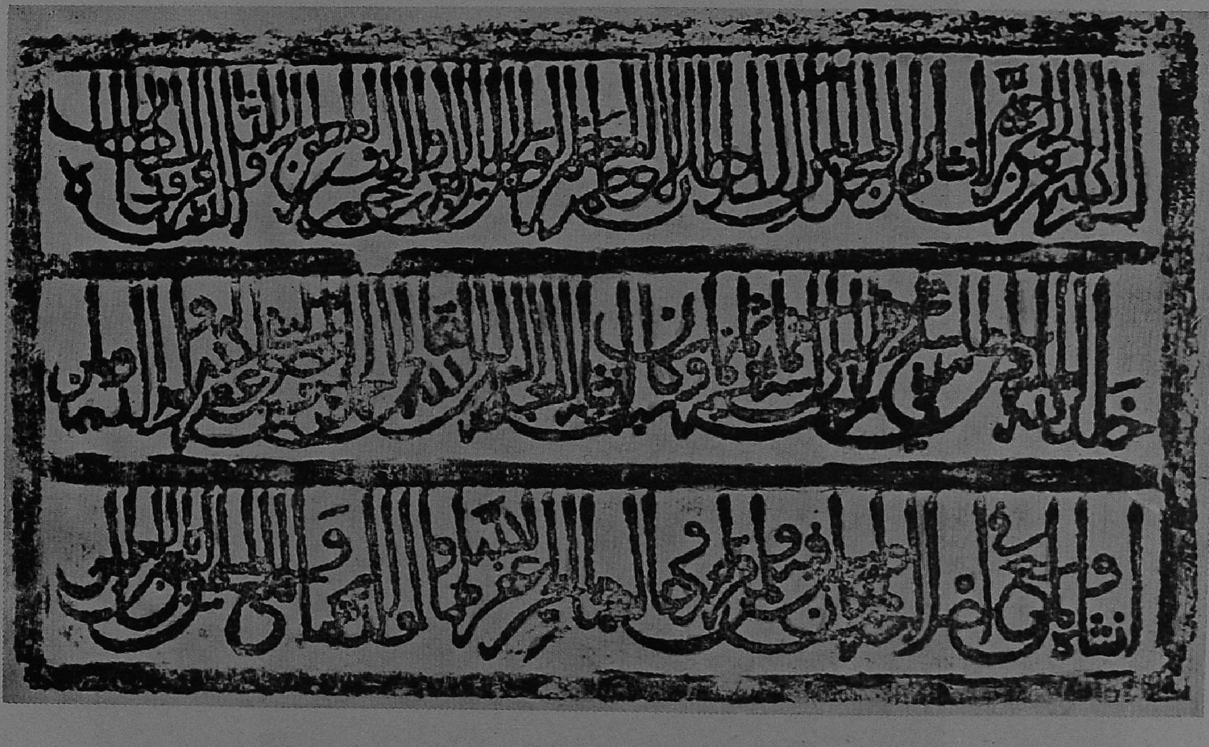


B

A, *Vidisha : Ramagupta inscription.* B, *Huli : Chalukya copper-plates. See pp. 46 and 47*



A



B

A, *Ahmadabad : inscription of Muzaffar II.* B, *Gulbarga : inscription of Firuz Bahmani. See pp. 54 and 56*

A

B

Vidisha : A, *image of Chandraprabha;* B, *image of Pushpadanta. See p. 67*

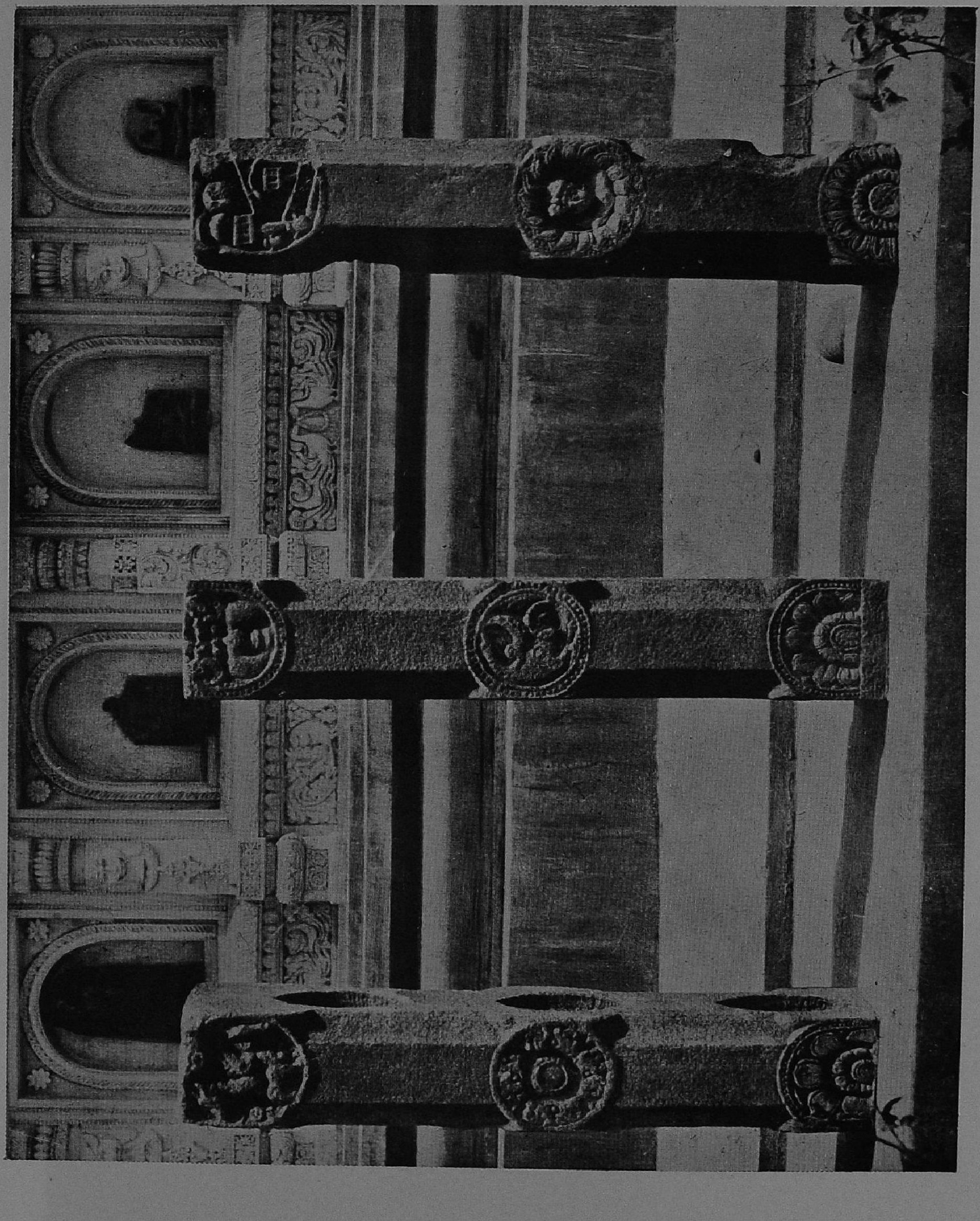
A

B

Chhoti Khatu: A, Surya; B, K

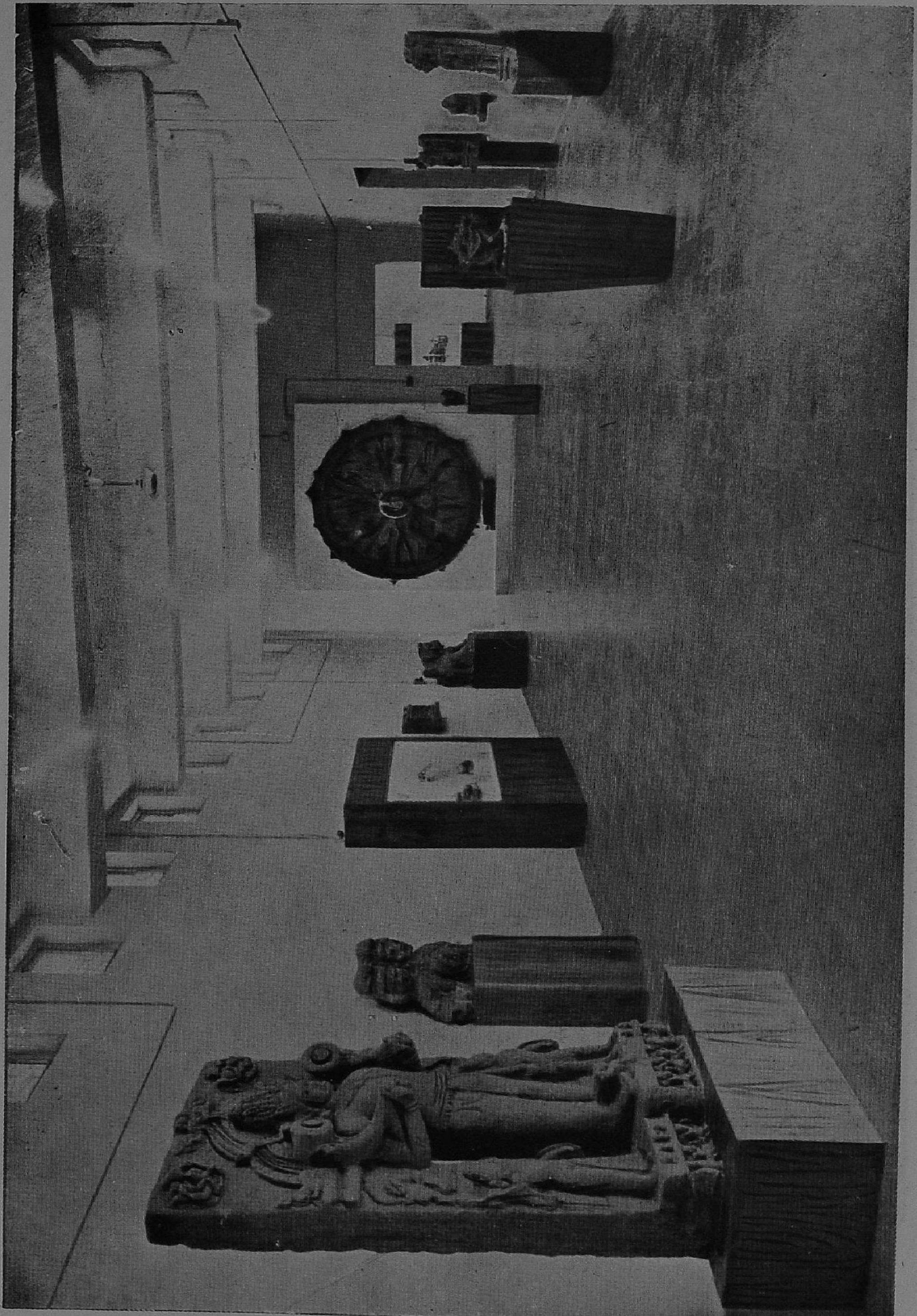
A B

Baroda Museum, Baroda : A, Gadha : image of Siva-Parvati. B, Shamlaji : image of Kaumari. *See pp. 74 and 75*



Bodhgaya : Sunga railing-pillars at Mahabodhi temple, now shifted to Archaeological Museum. *See p. 75*

Gurukul Jhajjar Museum, Jhajjar : terracotta plaques. *See p. 80*



Archaeological Museum, Konarak : Gallery 1. *See p. 81*

State Museum, Lucknow. Surya. See p. 81

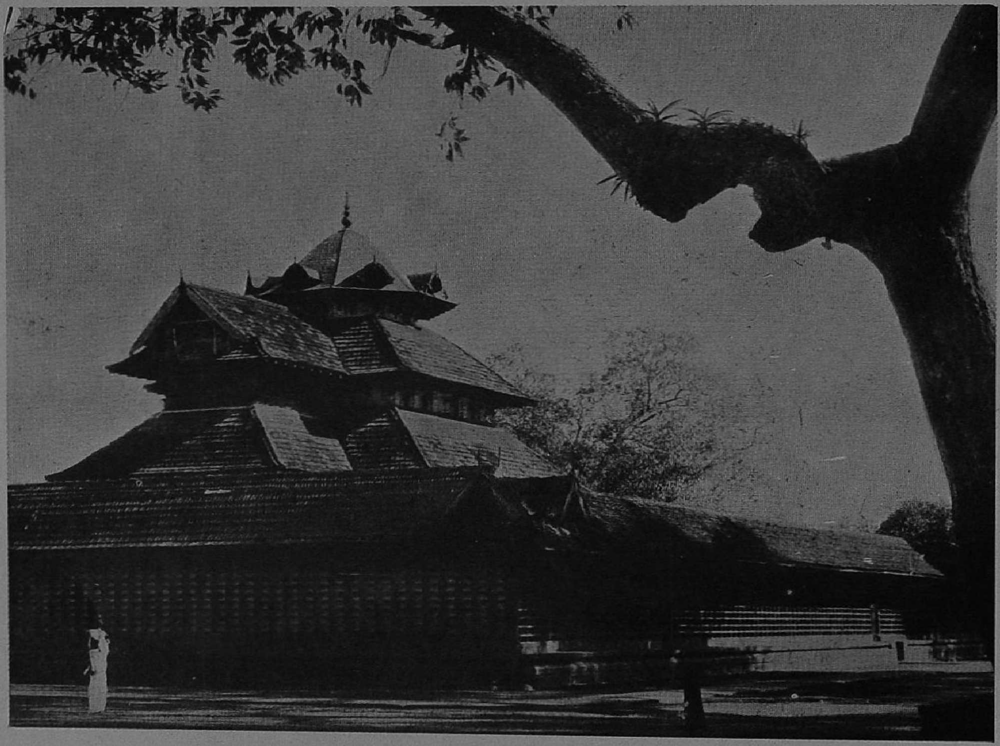
A

B

Archaeological Museum, Mathura: A, *Ardhanarisvara;* B, *standing Vishnu.* *See p. 82*

National Museum, New Delhi : terracotta plaque showing a child learning alphabet. *See p. 84*

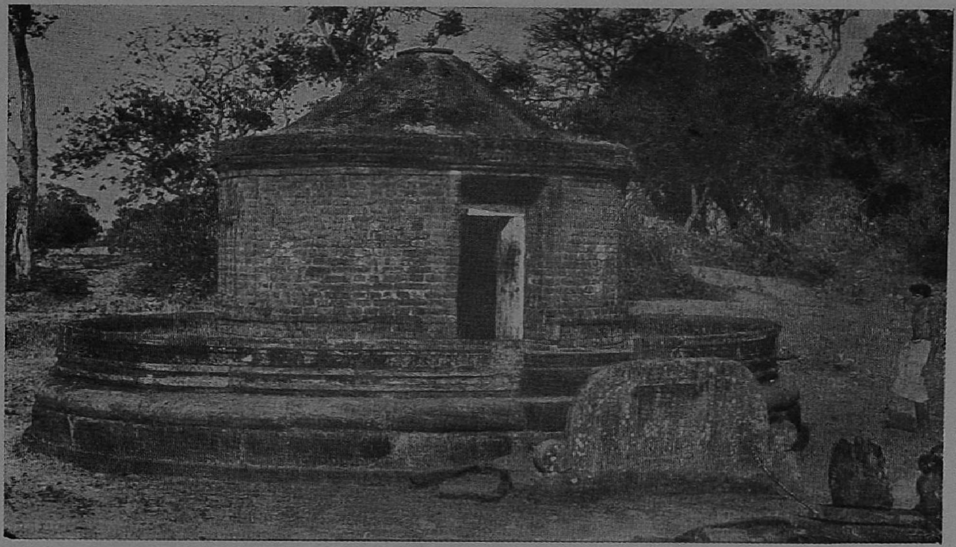
National Museum, New Delhi : dancer. See p. 84



A

B

A, *Peruvanam : Siva temple.* B, *Tali : Siva temple, vimana.* *See p. 86*



A

B

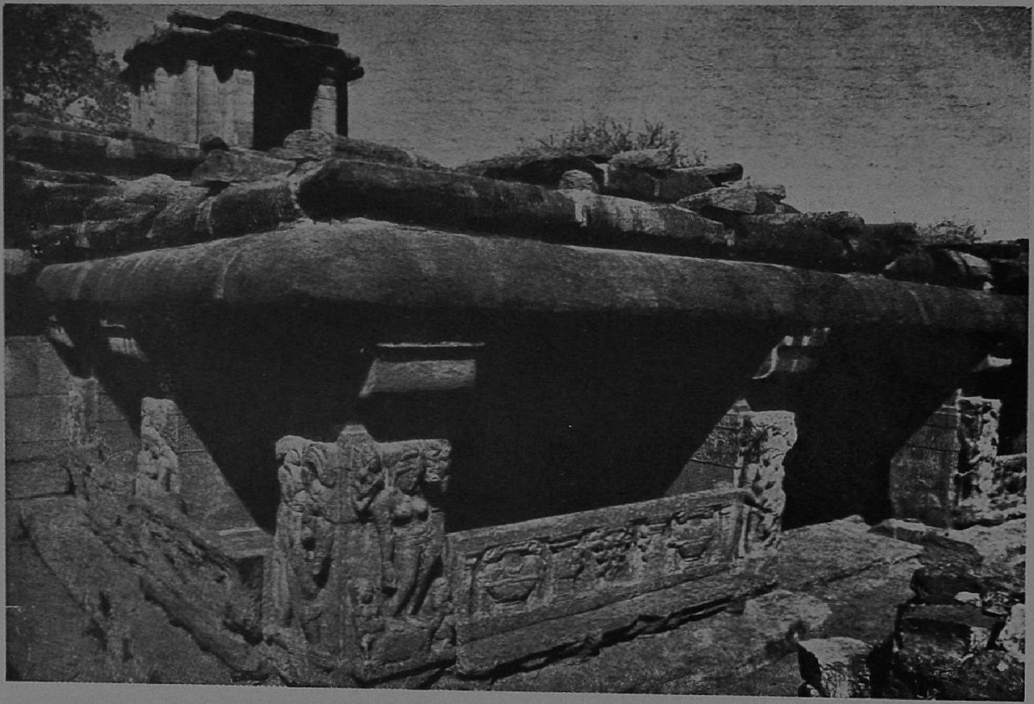
A, *Tirunelli : Siva temple.* B, *Tiruvanchikulam : Siva temple, vimana. See pp. 86 and 87*

Venganellur : Siva temple, wood-carving. *See p. 88*

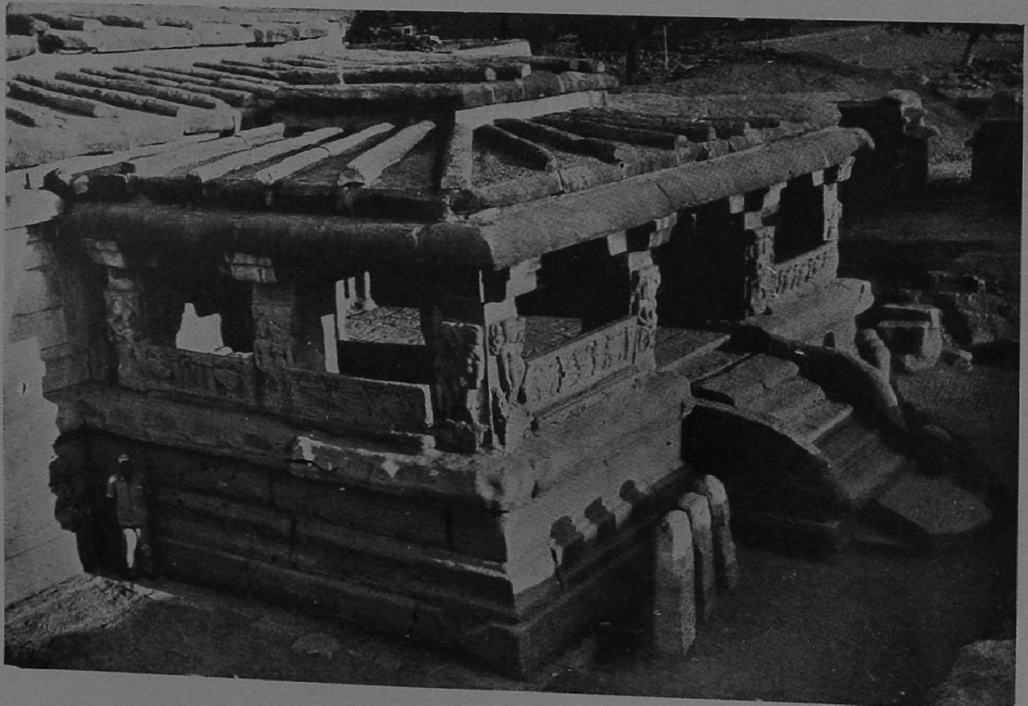
A

B

A, *Tiruvilvamala : Rama temple, gana supporting pranala.* B, *Tiruvalattur : Bhagavati temple, dvarapalika.*
See pp. 87 and 89

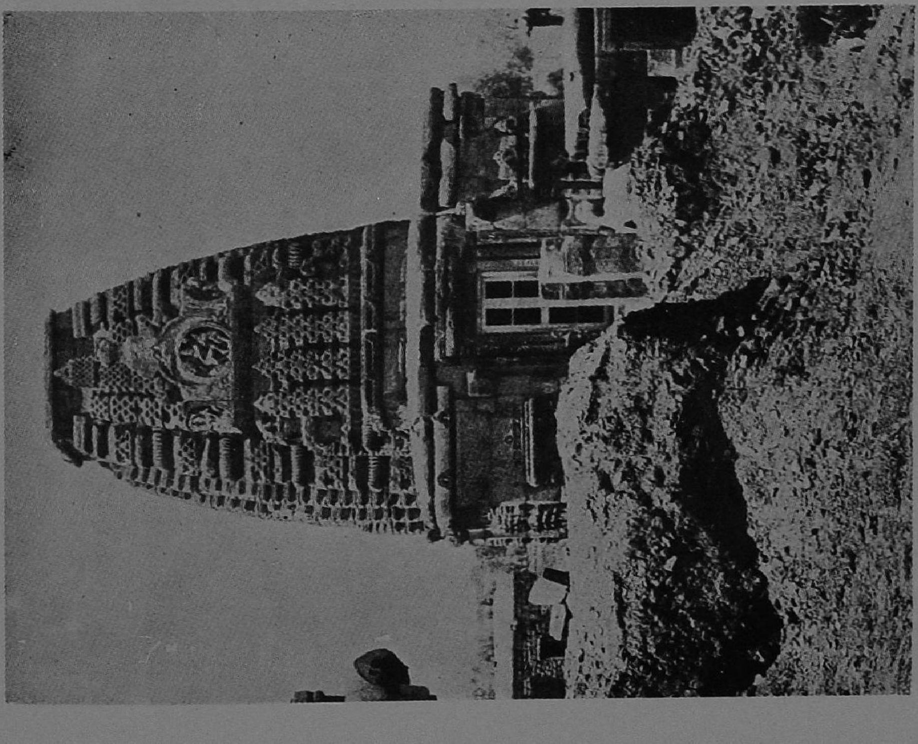


A

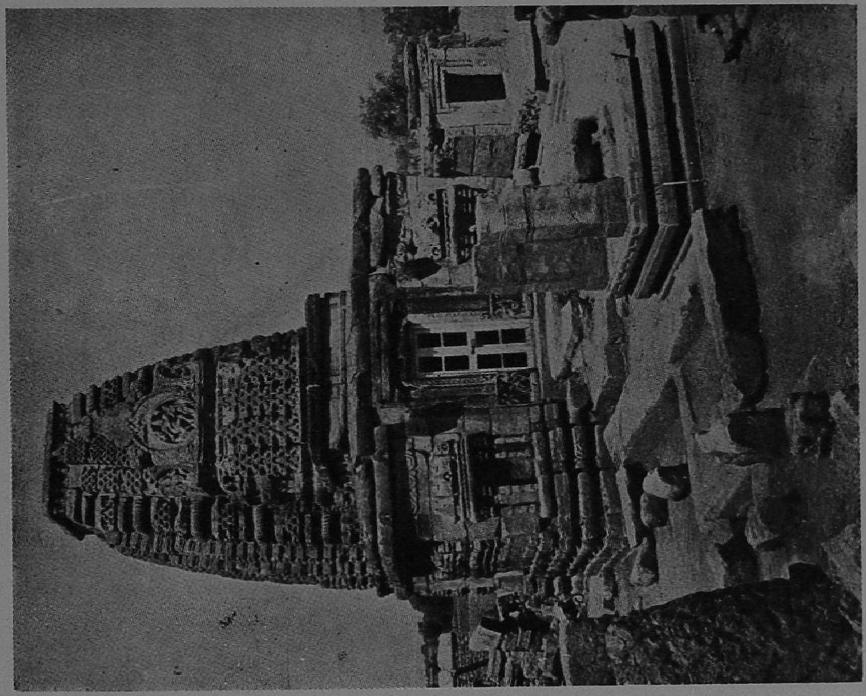


B

Aihole : Lad Khan temple, A, before and B, after removal of débris. *See p. 101*

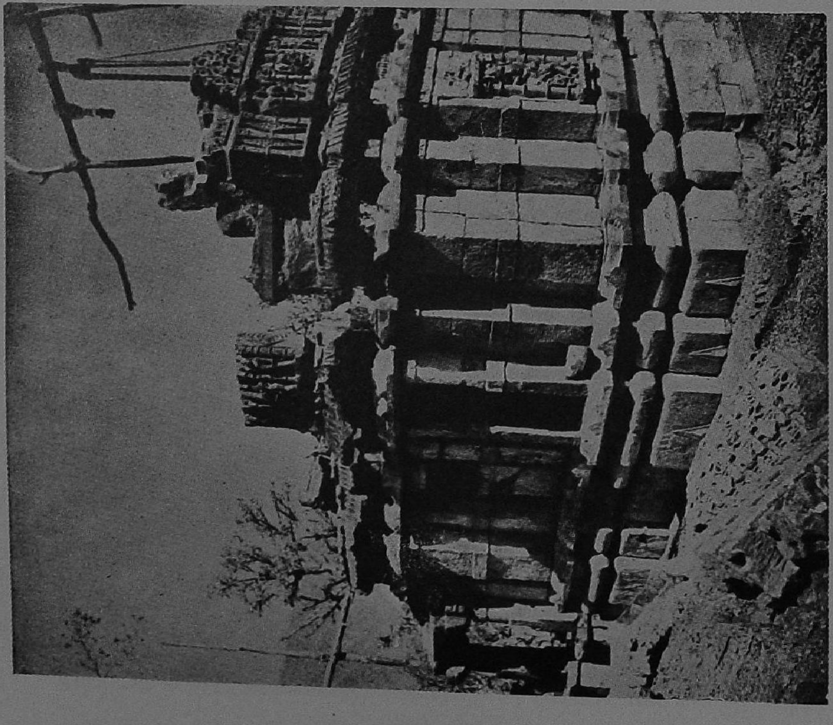


A

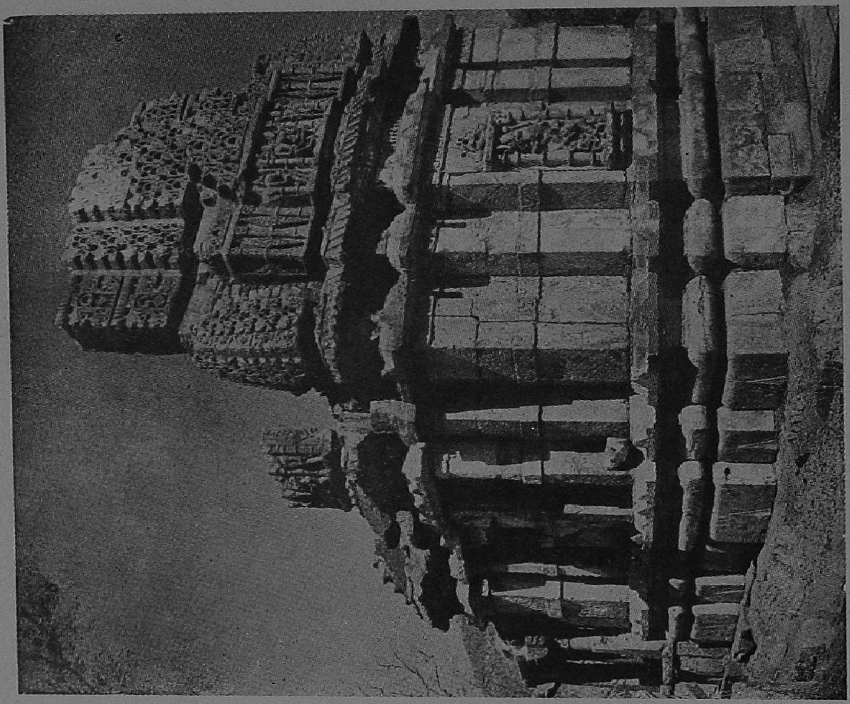


B

Pattadkal : Kasivisvanatha temple, A, before and B, after clearance. *See p. 102*



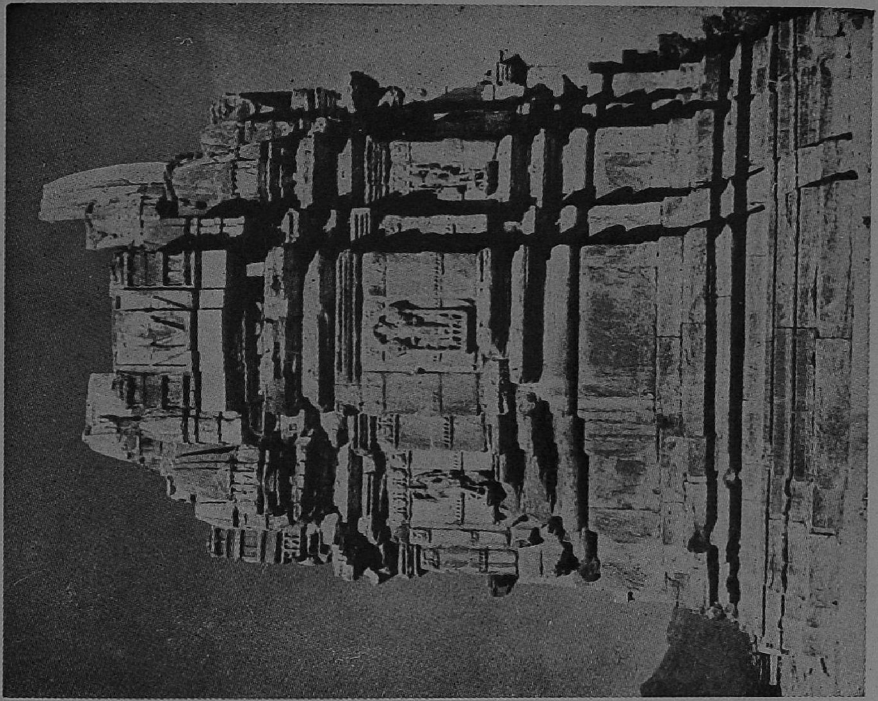
A



B

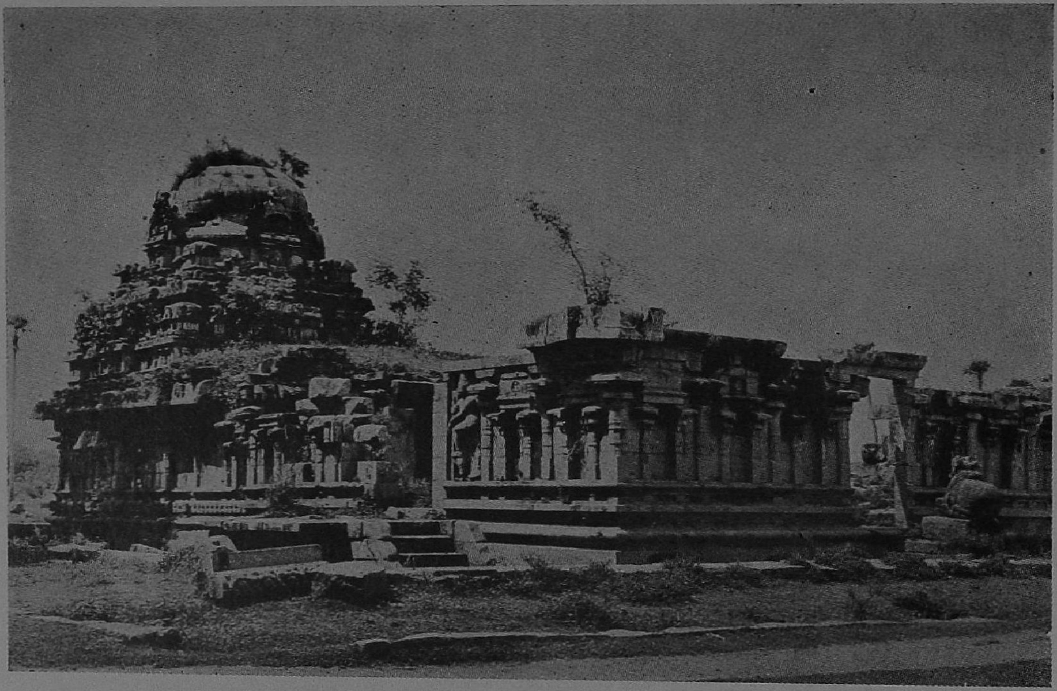
Antarsuba : Siva temple, A, before and B, after conservation. *See p. 104*

A



B

Antarsuba : Panchayatana shrine, A, before and B, after conservation. *See p. 104*



A

B

Kuzambandal : Gangaikonda-Cholisvaram temple, A, before and B, after conservation. *See p. 105*

AR